

IRIS IN
THE LITTLE GARDEN



ELLA PORTER McKINNEY

IRIS IN THE LITTLE GARDEN

THE LITTLE GARDEN SERIES

Edited by Mrs. Francis King

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By MRS. FRANCIS KING

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At low right, in mass, Iris gracilipes from Japan; Iris cristata as a border, practically past; Siberian and bearded iris in sunlight beyond

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BY
ELLA PORTER MCKINNEY



With Illustrations

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EDITOR'S PREFACE

ONE of the many signs of a more and more engrossing public interest in the iris is the constant increase in the number of price lists fluttering or dropping into our hands now through the post office. During the three or four months of summer, scarcely a day passes without such lists making their appearance. This is a business, however, apart from others.

I often wonder what the Vintners buy
One half so precious as the wares they sell —

and surely no one can engage in it in the first place except out of love for the iris. Everywhere people are reading about, studying, visiting iris gardens; some of the more serious are hybridizing, working in the hope of varieties of their own, which may electrify the world of iris lovers. From Italy to Japan, from California to Labrador, the beautiful flower-de-luce is either native or naturalized. England has its great creators of new varieties, so has France, so has our own country. Here, too, the American Iris Society, under the fine leadership of men like Mr. John C. Wister, Mr. R. S. Sturtevant, and Mr. B. Y. Morrison, has spread far and wide an authoritative literature of the flower.

The popularity of the iris, not only in our gardens but through our cities, is a thing to wonder at. Various cities, especially in the Middle South, have pushed the planting of *Iris germanica* until in May their towns glow with rainbow hues, carpets of living color flung wide in all directions. The tall bearded iris has caught popular attention, however, because of its spectacular beauty and the ease with which it is grown, to the almost entire exclusion of many other delightful members of this great genus. Mrs. McKinney shows in this volume how our gardens may be enriched by acquaintance with some of these; and how in the little garden, above all other places, may their delicate and intricate beauty be studied and enjoyed.

Readers of the Little Garden Series are wonderfully fortunate to have this intimate book from Mrs. McKinney, one of the foremost authorities in this country, upon the flower of her choice. In recognition of her brilliant and devoted work with the iris, the Garden Club of America in 1923 at Newport bestowed upon her the Emily D. Renwick Medal of Achievement. And two bits of testimony which may be added here concerning Mrs. McKinney's peculiar fitness to write of garden work are these: Mr. C. H. Connors, of the New Brunswick Agricultural Department (New Jersey), calls Mrs. McKinney "an outstanding exponent of sensible gardening"; and a brilliant woman at the head of one of the departments of the National Educational

Association, herself a great lover of gardens, said this summer to Mrs. McKinney, "You excel anyone I ever knew in doing the things that should be done and leaving the unnecessary alone." Having extracted the above from the author of this book, may I add her own comment thereon: "None of this has been design on my part, but adaptation to conditions — the only conditions under which I could have a garden at all."

Gardening under difficulties is, must be, more fruitful of creative results than that in which everything is easy. So it has proved here. And in launching this small volume, written with a fervor and a charm all too rare in print, I congratulate not only the host of iris-lovers, here and elsewhere, whom this book will enlighten and fascinate, but Mrs. McKinney herself on her notable addition to gardening and now to garden literature.

LOUISA YEOMANS KING

INTRODUCTION

WRITING from the Cambridge Botanic Garden, England, some thirty years ago, R. Irwin Lynch in *The Book of the Iris* said: "Probably there is no outdoor genus of plants which can vie with iris for the number of its good qualities. One kind or another will be found in flower quite nine months of the year. Many kinds are exceedingly beautiful and some, indeed, have no rival in point of beauty; a large number are so easy to grow that success is certain by any cultivator in any garden, yet others present difficulties which worthily excite the continued perseverance of the most skillful of gardeners. It is a genus *par excellence* for the intellectual specialist, and nothing at the present time is more to be desired than a large increase in the number of specialists in all classes of plants."

Twenty-four years ago a garden in northern New Jersey became mine. In close sequence Mr. Lynch's book was seen, and bought because of childhood love of the "little blue-flag" which spread lavender and gold for the coming of April on the lightly wooded hillsides of my home in Kentucky.

The little blue-flag developed into a personality, *Iris cristata*, grown by Peter Collinson in his English garden as early as 1766, sent him, no doubt, by John Bartram of Philadelphia.

With Mr. Lynch's book, now well thumbed and annotated, as a guide, supplemented later by Mr. Dykes's great monograph, many irises — species and varieties — have made, in my garden, sojourn brief or permanent according to the mutual good will of garden, gardener, and plant. By the aid of a simple cold-frame, I am able to write "twelve" months in the year for Mr. Lynch's "nine."

This small volume cannot be exhaustive, nor does it presume to lay down the law. It is not written for those who love to take their plants to the dissecting table. Mr. Dykes's monograph, *The Genus Iris*, and his later *Handbook of Garden Irises*, certainly the latter, should be in the hands of collectors and those who like to delve deep into botanical differences.

If through the stimulus of these pages more gardens may come to know the pictorial beauty of the iris in some one or more of its varied and exquisite forms, if a cultural problem may be made simpler, if the bewildered amateur may find a "filament slender" threaded through the maze of names, the writing will have had its reward.

To the garden friends whose questions have made my own gardening more observant, to Miss Mary Averett for her intelligent sympathy, to Mr. B. Y. Morrison for his beautifully accurate drawings, to Mr. R. S. Sturtevant for the use of his alluring plan, to the many cordial and interested visitors who have made the realization of my garden easier — to all these my gratitude is deep.

ELLA PORTER MCKINNEY

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IRIS IN THE LITTLE GARDEN

“While we extend our admiration to all flowers, trees, and shrubs in our possession, we shall derive a large gratification and advantage from knowing everything that is to be known — the nomenclature, the botanical distinctions, the culture — of some particular species or family of plants.” — DEAN HOLE

I

GEOGRAPHICAL DISTRIBUTION AND BOTANICAL CLASSIFICATION OF THE IRIS

WITH apparent pride in the form of plant life which men have called Iris, nature ringed the entire North Temperate zone with it. *Iris setosa* spreads purple shadow on fields but just released from arctic ice; the rich muck of Louisiana is tinged terra cotta with the tawny bloom of *I. fulva*. In Yünnan, China, *I. forresti* is found in mountain pastures twelve thousand feet above the sea; *I. subbiflora* grows in Portugal within reach of the ocean spray. Among the stones and under the hedge margins winter-flowering *I. stylosa* creeps about in Algiers. *I. dichotoma*, blooming in August and September, sows itself in the mountain meadows of Manchuria. From Hudson Bay to Texas *I. versicolor* grows in bogs that are perpetually bogs; in Asian marshes that become parched deserts in summer, *I. ochroleuca* sends up six-foot bloom stalks. Of unbelievable daintiness in foliage and flower, *I. gracilipes* is found in the dappled woodland shadows of Japan. In Dalmatia, on almost perpendicular limestone ledges facing the blazing sun, *I. cengialti* opens violet flowers. Everywhere, for positions of dryness and of moisture, of cold and of heat, of lime-charged soil and of soil free from lime, a form of iris has been evolved.

Botanists have brought representatives of the genus into careful classification, into sections and into subsections, recognizing distinct species separated by shapes of seeds, character of leaves, forms of roots, and parts of the flower. A very fascinating book (eleven and one half pounds avoirdupois and

ten pounds sterling!), *The Genus Iris*, by W. R. Dykes, has been written about it, listing one hundred and forty distinct species. However interesting to the specialist is this amazing amount of detail, to the average gardener it is bewildering. Yet a little of this botanical classification, which is really no harder to learn than the pedigree of one's favorite Airedale, is very helpful to the everyday gardener. It helps in ordering irises from lists; helps to understand the cultural needs of types placed in the garden; helps to enter irises correctly in flower shows; helps to talk about them intelligently to one's friends; and — the greatest help of all — adds new regions to the realm of the mind.

Broadly speaking, irises are divided into bulbous and rhizomatous species.

Bulbs in form are flattened stems, bearing on top one or more flower buds, surrounded by thick, pale, fleshy leaves, which from their under surface produce roots. Typical examples are daffodils and tulips and some irises, as shown in Fig. 1 at 1, 2, and 3.

Rhizomes are swollen, solid, underground stems, and typical examples are the better-known forms of our garden irises, as shown in Fig. 3; of the *regelia* group of irises, as shown at 4, Fig. 1; and of the *sibirica* group, as shown in the same illustration. The growing tip of a rhizome can always be seen, but the growing point of a bulb disappears during the dormant period.

The most widely known and, for the gardener, the most important group of irises is the rhizomatous, and this is divided into:

(a) **Pogons.** — The lime-loving irises carry a distinguishing mark on the falls or three lower petals. (See diagram of parts of iris flower, Fig. 2.) This conspicuous ruff of soft hair-like



Figure 1. Some types of iris roots

(1) Bulb of an iris of the Juno group; (2) bulb of an iris of the Xiphium group; (3) bulb of an iris of the Reticulata group; (4) rhizome of an iris of the Regelia group; (5 and 6) rhizome of *I. gracilipes* and *I. cristata* of the Crested group

Rhizome of *I. sibirica*, and representative also of the rhizome of *I. kaempferi*

appendages, often brilliantly yellow and an important contribution to the beauty of the flower, was called by the early botanists the *pogon* (Greek for "beard"), and so we have the Pogoniris or the Pogons — the bearded. The distribution of this group is not wide. Throughout central and northern Europe, in Asia Minor, and in India, centres are found. They are characterized by wide foliage and heavy, thick rhizomes, capable of enduring long conditions of drought. It is of interest that no bearded irises are found in America — a botanical fact

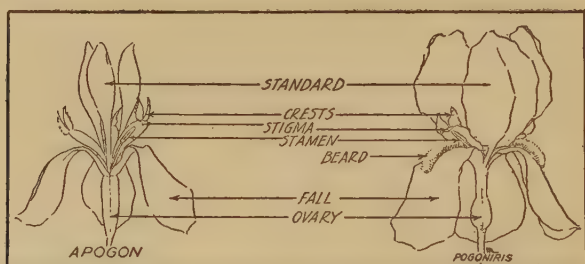


Figure 2. Diagram of the parts of iris flower

noted gayly by Eden Phillpotts: "American irises are as naked of a beard as a Red Indian."

(b) **Apogons.**—From the most widely distributed and oldest group this decoration of the falls is absent; they are *a-pogon* ("without a beard"). Typical examples are the Siberian irises and the Japanese irises of our gardens, and our native *I. versicolor*. The rhizomes are thin and furnished with many fibrous roots, indicating love of moisture. (See Fig. 1.) The foliage is slender and rush-like. It may be that some of the species in this family are lime-enduring, but none of them are lime-loving.

(c) **Crested.**—This is a small class, the falls of which are marked, not by a soft ruff, but by a linear crest. In *I. tectorum*

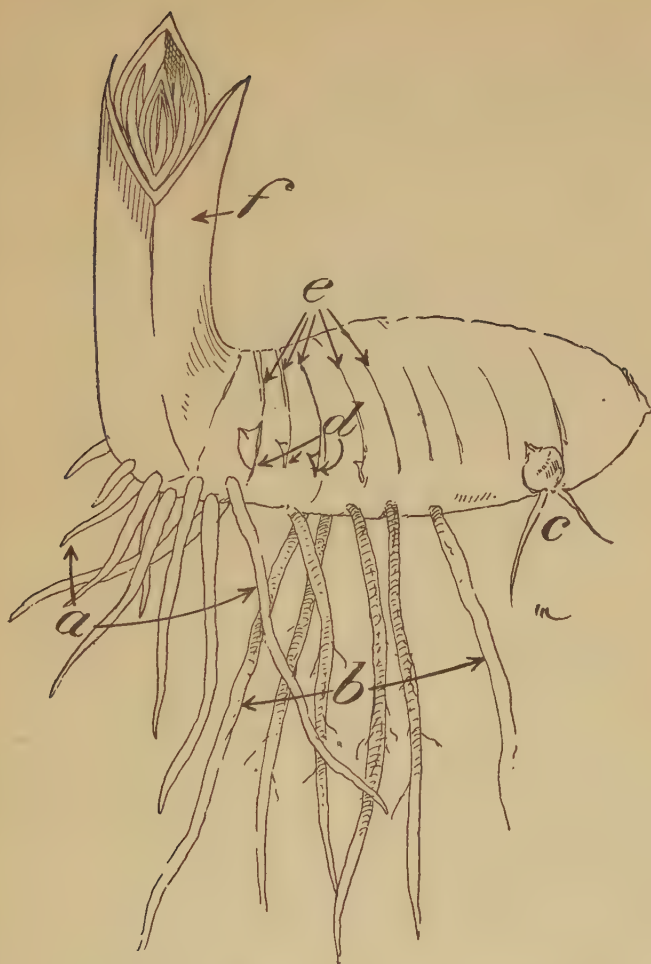


Figure 3. Rhizome of pogoniris in autumn

(a) New roots; (b) roots formed in previous spring; (c) shoot developing from bud in axil of leaf now dead; (d) undeveloped buds in axils; (e) scars of dead leaves; (f) existing leaves cut back for transplanting

the crest is a prominent part of the structural beauty (Fig. 4); in *I. gracilipes* and in *I. cristata* it is not so prominent. The three species mentioned of the eight known in this division are charming and easily managed garden plants, cultural requirements for which are given in Chapter III on the dwarf irises.



Figure 4. *Iris tectorum*

II

LONG HUMAN ASSOCIATIONS AND ADAPTABILITY OF THE IRIS

BLISS CARMAN's tribute to the white iris, as a princess that swayed men "ere Babylon was builded or a stone laid in Tyre," is substantiated in fact by the discovery of an iris flower on a bas-relief of the time of Thotmes III, about 1500 B.C.¹ Travelers of to-day bring reports of miles of iris in the Moab region beyond the Jordan. Some such sight as this must have swayed that engaging Pharaoh, who brought to Egypt from his numerous expeditions into Syria plants in variety for his Syrian garden. Among them apparently was the iris, and so he becomes the first recorded grower and importer of the flower now the object of accumulative quest.

Attempts to trace the history of the iris impress the close human association the plant has ever held. Pliny, who entertained high opinion of the medicinal value of scents, declared that as many as forty-two ailments were curable by the scent of the iris. Dioscorides wrote, "Irises are very useful generally," which opinion he emphasized by relying with equal assurance upon the dried rhizomes to bring babes safely into the world and to remove freckles from their faces when grown up! Parkinson, herbalist and keen beauty lover as well, declared that the flower-de-luce, more than three hundred years ago, "for his excellent beautie and raritie deserveth first place."

Wherever the religion of the Crescent penetrated, the beautiful white *I. albicans* was carried by the Mohammedans, either

¹*Handbook of Garden Irises*, Dykes, page 153.

as a sacred emblem or as a conventional ornament for their cemeteries. This iris is to-day found in remote parts of Mexico, and yet the Mohammedans were driven out of Spain in 1492. Fit emblem of eternity!

The limits of this book do not permit a garden history of the iris. It is a fascinating story, charming bits of which are gathered in the excellent bulletins of the American Iris Society.

England and Germany, France, Japan, America — each bears a conspicuous part in having brought the iris to pomp and position that would astound Thotmes III or John Parkinson. Sir Michael Foster, in an attempt to find plants that would be happy in the dry chalky soil of his garden at Shelford, England, started an enthusiasm that now, more than fifty years later, is burning at high heat. Before me as I write is the latest catalogue list from one of England's great iris specialists. The novelty of the year is priced at twenty guineas. If it is all that is claimed for it, the purchasers will not be disappointed; and, thanks to the fact that irises increase and prices decrease, we shall in time, even in our small gardens, come to know this one, if it bears the severe test of trial in many places.

Not of the high-priced novelties, but of the tried and tested, must our garden pictures be made.

The small garden or the large could ask no more of any family of plants made a guest within its walls than that which the Iris genus gives — lavish return in bloom in shades of violet and rose and milk, of fawn and gold and ruby; and after the bloom, constant-hearted and comforting green — all of this for a modicum of care and with comparative permanence. Ease of culture and patience in adversity make it an admirable plant for gardens subjected to conditions of smoke and soot. The Pogoniris has been naïvely suggested as a good flower for the tenant of rented property to buy, because it can so easily be

removed at almost any time! No other perennial gives the same range of color or variety of form. The blooming season is long — from late March and early April into September, out of doors in my northern New Jersey garden. Not the least of its invitation is the wide range of species adapted to diverse positions in the garden and diverse tastes in the gardener.

If the huge and spectacular is desired, the *Pogoniris* offers material four and five feet high, with bloom six and seven inches long, while from the same family slender-stemmed plants of great finish and refinement of color delight the discriminating, and for the lover of the tiny there are mites from three to ten inches, accommodating themselves to sunny ledges and tops of walls. For part shadow and soil generously filled with moisture-retaining humus, the Crested family gives us forms of intricate and delicate charm.

In the great family of the *Apogon* or Beardless Iris, — too little known in our gardens, — hardy and delightful material is offered, ranging in height from pygmies of a few inches to four and five feet, accommodating themselves to the usual garden conditions and thriving also on margins of water and in positions where the *Pogoniris* (Bearded Iris) would pine and die. Two members of the family grow rampantly with their feet actually in the water, and are valuable and beautiful aids in holding soil together in such places. There is no garden, however small, that has not some position suited to some iris.

SEQUENCE OF IRIS BLOOM

Late March to early April. — Two to six inches: *I. persica*, *reticulata*, *pumila* Atroviolacea.

Late April to May. — Four to ten inches: *pumilas* and *chamæiris* with hybrids, *Cœrulea*, *Lutea*, *Socrates*, *Bride*, *Lutescens*, etc.

Early May to mid-May. — Four to thirty inches: intermediates, *arenaria*, *cristata*, *florentina*, *germanica*, *regelio-cyclus*, *cengialti*, *Brionense*.

Later May. — Dutch irises, *longipetala*, *missouriensis*, *Californian*, *gracilipes*, *tectorum*, *verna*, earlier tall bearded.

Late May to early June. — Tall Pogoniris in variety, *graminea*, *sibirica*, *orientalis*, *pseudacorus*, *versicolor*.

Before and by mid-June. — *Prismatica*, Spanish, *lævigata*, *foliosa*, *fulva* and hybrids, *chrysographes*, *wilsoni*, *ochroleuca*, *aurea*, *monnieri*, *Monspur*, *xiphioides* (English), early Japanese.

Later June to July. — Japanese irises.

August to September. — *Iris dichotoma*.

III

DWARF IRISES — EARLY APRIL TO LATE MAY

It has seemed advisable not to divide the irises which we may have in our gardens into strict botanical sections, but into groups considered from the point of garden need for low-growing or for taller-growing plants, and presented as we may have them, week by week.

I use with remonstrance the word "dwarf" as applied to this adorable class of garden material. This statement is made in accordance with the fact that the hybrid *pumilas* — some of them — like the humpbacked *Schneekuppe*, the too squat and large *Cyanea*, and the *Orange Queen*, entirely merit the designation. But there are types in exquisite proportion — growth, foliage, and flower in miniature perfection. That these are found most often in wild species is true, but they present an ideal toward which our hybridists, now beginning more and more to turn their attention to the miniature, may work. When we have produced a series of early low-growing irises in as complete a range of color as we have now in the taller, and in the delicate proportion of the western *Erythroniums*, for instance, a worth-while addition to garden material will have been made.

It is unfortunate that so much of the garden knowledge of the miniature iris has been confined to the ungainly hybrids, types of which are mentioned above. These have been the kinds most often found in lists. With the wave of interest in rock gardening, however, lists are certainly lengthening and offer greater opportunity for trial and choice.

From this treasure of material, bloom may be had for a full six to eight weeks, in height from four inches to twelve, and in color from white and cream to pale and deep yellow, from sky blue to deep violet; and there are red-purples, needing but the sun's rays through them to splash our pale spring gardens with rubies. There is a sweet quaker-garbed one for nestling against gray stones. There is a surprising tan and gray and brown, arrestingly lovely seen in the sunshine. Many have delicious fragrance; some are diminutive patterns of the taller bearded sorts, liking dry places and full sun; others are tiny chalices of pink and blue lavender, marked with inlays of ivory and gold and violet, loving moist corners and sunlight distributed by high boughs. Some keep excellent foliage throughout the season, increase rapidly, and are of the easiest culture. Some are elusive enough to be given the most luring place of abode and to be exulted over as rarities. And yet, with all their charm, there are gardens — and good gardens — that know miniature irises not at all!

All divisions of the genus furnish early low-growing types — the bulbous, the bearded, the beardless, and the crested.

BULBOUS DWARF IRISES

To write of bulbous irises in American gardens is, for the most part, to write of the substance of things hoped for and the evidence of things not seen. May these few words be as grains of mustard seed to move the gardener to move the grower in America to supply us with these delightful and — but for the Spanish *I. xiphium* and the English *I. xiphoides* — scarcely known forms of the *Iris* genus in our gardens.

With Quarantine 37 in operation, to read the matter-of-course references in English gardening periodicals to “masses” of *I. reticulata* is to school one's self mightily in the observance

of the tenth commandment. There must be places in this wide America where all these small beauties may be grown so well that we may have them, if for no longer a permanency, at least as we may have tulips. Already the Spanish irises are being grown commercially in the Pacific West, but we may have only a dozen where once we could have a hundred; for the stock is limited. I believe there are other places where these might be produced commercially. I am recalling the yard of an old black mammy in middle Tennessee, where a robust form of the Spanish iris (*I. xiphium*) ran wild, filling the place with its blue-violet beauty. In this same locality, the little sweet iris (*I. persica*) has been grown since the memory of man, and increases to big clumps.

Mr. Dykes divides the bulbous irises into three sections: the Juno section, the reticulata section, and the xiphium section. Between *I. persica* of the Juno section (see 1, Fig. 1, for character of bulbs) and *I. reticulata* (see 3, Fig. 1, for reticulated coat on bulbs) it is always a race in late March and early April for the first opening, with the honors going to *I. reticulata* in my garden. The black-violet butterflies of this small and deliciously fragrant iris come forth the moment the restraining hand of frost is lifted, and often stand fully open above freshly fallen snow. Before me as I write are two pictures sent me last spring, one from Illinois, showing *I. reticulata* in bloom above snow, and the other from Virginia with the purple outlines clearly traced over soft masses of snow! Both these pictures are material evidence that gardeners help, if they do not indeed make, nurserymen's lists. *Iris reticulata* is hard to obtain. I happen to know that both of these eager gardeners asked and kept on asking. In isolated gardens there are treasured clumps of this now rare iris. It is a native of the Caucasus, and seems to do best in rather heavy soil full of humus, in which some lime

has been incorporated, and in well-drained positions. One good gardener, who boasts hundreds, lifts annually when the foliage is ripened and replants in early September about three inches deep. If a few bulbs can be secured, they should be given the solicitude accorded to rare jewels.

My bulbs of the small delight called *I. persica* (see 1, Fig. 1, for character of bulbs) came to me from a generous little girl in the community of which I have spoken. They were a matted clump such as we often see in the star-of-Bethlehem (*Ornithogalum umbellatum*). Normally they grow to the size of hen's eggs,¹ but no single one in this precious offering was larger than an early radish, and more were the size of cherry stones. Moreover, they had been taken up in full foliage. Careful separation gave only a few bulbs with the characteristic thong-like appendages. The others were merely plain bulbs. All were planted with deferential preparation approaching as near as possible the rich red soil among limestones from which they came. Every bulb carried through the winter, but none bloomed until the second spring; and the following August, after the foliage had disappeared, tragedy visited the spot in a digging fork propelled by that demon of misdirected energy, a by-the-day man, on a hunt for bare places to make ready for new plantings. Prayerful grabbling returned few, for they were still small. So I have no great increase to report, but I do have the memory of this sweet, small flower in sea-green, black-violet, and gold, opening (my garden notes tell me) on the seventh of April in 1923, "a very cold and late spring." The rescued bulbs have appeared each spring, though they have bloomed but once since the tragedy. I am optimistic and confidently expect them to respond from their small pocket among stones. In the neighborhood of which I speak, their beauty and sweetness had

¹ Foster, *Bulbous Irises*.

impressed the casual gardener and not an iris enthusiast. It takes a plant of vigor and industry to do that. Part of the vigor, no doubt, is due to the summer baking to which the district is subjected.

Mr. Morrison reports success in Washington ("Garden Irises," Farmer's Bulletin 1406, page 26) with other members of the Juno group. I have had gratifying success with *I. bucharica*, which looks like a small plant of Indian corn with ivory, gold-marked, freshly fragrant blooms from the axils of the leaves. This blooms later than *I. persica* and reaches a height of twelve to fifteen inches. A fine plate appears in the Bulletin just referred to (page 27), showing the queer small standards pressed down toward the stem. Iris lovers in California, that Elysian field, can cultivate with gratifying returns varied bulbous irises, and there must be also many places in our Southern states where the results may be equally good.¹

BEARDED DWARF IRISES

In the low-growing bearded irises that bloom early and prodigiously, the most casual gardener has easily managed and responsive material. For sun-bitten ledges in rock gardens, for edgings in well-drained hot borders, for tops of walls, these diminutive replicas of the tall bearded iris are delightful subjects. Travelers tell us how the flower-loving Portuguese scoop deep furrows along the tops of low garden walls by the side of which paths run, and fill these furrows with garden mould, in which is planted "the dwarf scented purple iris of Portugal."

¹ Mention should be made of two plants not admitted into the iris genus by the latest authorities, but which the popular mind, supported in the case of *I. tuberosa* by Sir Michael Foster, includes among irises. *Hermodactylus tuberosus* (or *I. tuberosa*), a hardy April or May blooming tuberous plant, suggests, in leaf, *I. reticulata*, but is only itself in the quaint apple green and velvety-black flower. Culture is not difficult. *Pavonia glaucopsis* (*I. pavonia* or peacock iris) is a tender South African bulb with flowers of great beauty. Pot culture.

I have seen drifts and patches of these small irises used on a sharp stony bank sloping to the southwest, with an effect of great beauty. When the low western sun was upon them, one thought of cathedral windows. They ask for so little — giving and spending in the most unrelenting soil, if they only have sun and good drainage! Care, however, must be used to give them annual top-dressings of bone meal and lime, with division before the rhizomes heap up too thickly on each other. Instances are on record of plantings in old dooryards, where the rhizomes are piled over and over each other and still give bloom, but if allowed to go too long the mat of rhizomes, unable to get sufficient hold by fibrous roots, will be heaved entirely out of the ground by sudden thaws. Mr. Dykes advises a replanting every second year. I have not found this frequent division necessary, but allow them to remain usually four years, sometimes longer, where bloom and not propagation is desired. Watchfulness must be alert that no border plants shadow, or, in the rock garden, that no sedums in elfin seven-league boots stride over the sun-loving rhizomes.

To certain groups of low-growing bearded iris in Austria, Hungary, and South Russia, the botanists gave the name “*pumila*,” from the Latin *pumilus*, diminutive; to other groups of southeastern France and northwestern Italy, the name “*chamæiris*,” from the Greek *chamai*, meaning “on the ground.” There are botanical distinctions, a main one being that *I. pumila* lifts its flower not on a stem but on a long perianth tube, while *I. chamæiris* interposes a stem between the flower tube and its ovary. To the gardener these differences do not appeal — only that the flower be lifted! Recognizing this, the American Iris Society has classified them as Dwarf Bearded Iris. In the lists that follow, no attempt at division is made.

Some good varieties and species are: —

Atroviolacea. — Old-time gardens often bound with a ribbon of this tiny purple iris beds of pink and white hyacinths, — a winsome April adornment for a prim little terrace, — and in some of these gardens it is still treasured for its earliness and fine color. It is the very first of the bearded irises to bloom. After a few days of tender mood in late March, groping fingers will be rewarded by the plumpness of buds pushing rapidly up — as sure a sign of spring's return as the winging contralto of the bluebird overhead. It is a cold spring that does not find bloom for the first week in April. The color is light wine-purple in the standards, while the falls are velvety red-purple. The flower is not too large, and the height is far less in inches — three to four — than the name in syllables. Unfortunately, a variety (*Macrocarpa*) is confused in lists and is much less attractive because of the larger flower.

Cœrulea. — Of the blue of the sky veiled by a summer morning's cobweb, this mite of four inches occasionally catches up with *Atroviolacea*; but if the season is normal the first is past before *Cœrulea* opens. There are two distinct plants in commerce bearing this exquisite color, and offered, perhaps interchangeably, under *Cœrulea* and *Azurea*. The plant I have in the garden as *pumila* *Cœrulea* is low growing and loses its foliage in the autumn. That which Mr. Dykes classes as *Azurea* is, in garden effect, the same in color, but the stem is longer, the bloom a trifle later, and at this writing, late October, the foliage is still good, while that of *Cœrulea* is gone except the starting leaves of next year.

Lutea. — This pale yellow is delightful in longish drifts that run into *Cœrulea*, blooming in front of yellow-chaliced narcissus *Autocrat*. *Lutea*'s prodigality of bloom is truly amazing. My notes record on a single plant, two years from division, twenty-five bloom stalks. On established plants the stems reach eight to ten inches, making it a desirable small iris for cutting. The fragrance is warm and pervading, and we always look forward to the time when a certain dull copper bowl may be filled with these, sometimes alone and at other times in mixture with seedlings in other delightful shades of yellow.

Socrates. — A wine-red of good color and attractive habit in the carriage of its stems, which are slender and from six to eight inches. Thought to be a wild plant.

Statellæ. — This is a variety of the type, *I. lutescens*, and is a great favorite of mine. The blossom is in proportion to the growth, is supported on slender stems which are eight to ten inches and sometimes

carry as many as three flowers. Creamy white, and pleasantly scented, it is delightful for cutting, and has a long flowering season, the earlier part of which in late April coincides with wine-red Socrates. The foliage remains green throughout the winter.

Ditton's Purple. — A good violet form, floriferous and with flowers of pleasing size. An established plant looks like a huge violet corsage bouquet when in bloom. Same season as Statellæ.

Excelsa. — Deeper than Lutea and with the same season of bloom in my garden. The falls are slightly washed with purple.

Bride. — This is a good white, — a cool white, not creamy, — and has especially pleasing foliage. Unfortunately Nova Candida is sometimes offered for the Bride. This has a musical name and is assuredly a "new white," which looks like nothing so much as wet tissue paper!

I. gracilis. — A demurely colored, fragrant little iris that is much liked by Mrs. Wilder, nestling against warm gray stones, which echo its flowers in palest yellow-gray, splashed and mottled with dull purple.

I. aphylla. — "Without leaves" in winter is this small native of Hungary and the Caucasus. It starts up with great rapidity in the spring, making leaves which sometimes attain eighteen inches before the season is spent. The flowering stems are from eight to ten inches and carry as many as three or four flowers. An interesting characteristic of this plant is the branching of the flower stem close to the ground. The type which grows in my garden is a showy purple and the plant is valuable for splashes of color, but the flowers are too large and too close together to be admitted for beauty of form. It is a prodigious seeder, and from it have sprung some good garden forms. Seedlings are easily grown, but care must be taken to select those that do not bury the flowers among the leaves; and there is more delight if the large-flowered plants are discarded. I have obtained some pleasing results by crossing it with the more slender and longer-blooming Statellæ. *Gracilis*, referred to above, is also a seedling of *aphylla*, as are Pyramus and Thisbe, two charmingly named and floriferous small seedlings produced by the late Mr. Dykes. The first is a violet-blue, the second a pale bluish white.

Marocain. — A new French introduction that is recommended for its deep color, a rich violet. It has bloomed only once in my garden, and was attractive; but I have not seen it in mass.

Glee. — A seedling of my own, the result of a cross between Statellæ and Socrates in an effort to find a plant combining the longer blooming

season of the first with the graceful habit of the second, and in other colors. The blooming season is long, — three to four weeks, — and the stems are thrown up at varying heights, from eight to twelve inches. The foliage is fine even in winter. The flower is pale yellow, on stems that sometimes carry three, always two, blooms. If the flowers were smaller and fragrant, I could find no fault with it.

Black Midget. — A very free bloomer of fine color. The standards depart from the regular pattern by cutting, indeed, almost fringing their edges. Sometimes this temperamental gayety is carried to the length of sending standards up on slender hafts that break badly in the wind. At other times the bloom conforms to type, with the exception of the cut and indented edges. The stems are ten inches, the buds almost soot black, and there is frequently an autumn bloom. Late April, eight to twelve inches.

Ylo. — A lemon-yellow *pumila* hybrid of four to ten inches, with flaring falls, it is attractive in description; but I have not yet seen it or Silver Elf or Reflection, all of which make something to be lived for until next spring.

I. reichenbachii. — A Balkan form, of more dainty pattern than the small irises that come from southeastern France. The stem is slender, five or six inches long in the type, bearing sometimes two flowers. The yellow varies in depth; the beard is heavy and deep in color, and early May is the time of bloom. A delightful small iris, perfectly hardy, but not rampant, and needing a winter mulch of evergreen boughs or other open material to protect against winter thaws. Lime, a well-aerated and plentifully fed soil, sun, and division when the clumps have become thick, are its modest but imperative demands.

I. arenaria (sometimes listed as *flavissima*). — With rhizomes hardly as large as the finger of a cherub, and with a fully developed beard on the falls, this little sand-loving iris from Hungary fairly takes the breath with its explosions of yellow, vanilla-scented bloom in early May. The flowers are fugitive, lasting only to noon on hot days — the entire day if the weather is dull. Two to three flowers are borne on the two- to four-inch stems, so there are several “explosions,” extending over a period of ten days or two weeks. It sets many seeds by hand pollination which sometimes germinate readily, at other times not at all for me. I grow it in sand well enriched with leaf mould, with lime and bone meal added. If happy, it soon forms a mat of rhizomes, which should be divided and reset either in June or early August. Remember it demands sun and the full tenancy of its tiny domain,

and that it is adapted to sunny, well-drained spots in the rock garden, not to the border.

Lurida. — A small mahogany-colored bloom, valuable for cutting. The blooming season is early May, and it is easily managed by the treatment given others.

Parvar and *Paracina*. — These are two weird irises of rich coloring and unusually shaped segments, the falls of which carry a heavy close beard that is like velvet. In sunshine the sombreness lights up, and they are effective in association with early low *Hemerocallis*. Black-purple, brown, and ivory are the colors they wear on fifteen-inch stems, and they bloom in late May. Sir Michael Foster produced them by combining bearded varieties of vigorous growth — *variegata* and *sambucina* — with the Asiatic species *oncocyclus*, not very amenable in our climate. I find them easily managed in warm well-drained spots that are thoroughly limed. Division every three or four years is necessary. These are irises for the lover of the unusual, and are interesting for cutting, but in the garden are valuable only as a detail of interest. They do not seed.

I. korolkowi. — Something like forty years ago a Russian general, whose name this iris bears, sent roots to Petrograd from Turkestan. Whatever his soldierly qualities, he was an appraising flower lover, as a glance at the patrician lines of the sketch (page 70) will confirm. I mention this iris here, particularly because of the great beauty and distinction borne by some numbered seedlings in a flower show in Plainfield, N. J., at which I was privileged to judge last May. One was a lovely shade of blue, which, with the creamy white of *statellæ*, made an alluring picture. Cultural requirements are found in Chapter IX.

PROPAGATION

Propagation of these early low-growing bearded irises is easy and rapid, either by division or by seeds.

(a) **By division.** — Established mats of rhizomes are best divided any time after blooming, until not later than mid-September in the Northern and Eastern states. Later division and planting are often attended by loss through alternate freezing and thawing, which the small-sized rhizomes are less able to endure than are the larger types. Whenever the season

of planting, if a drought follows, watering should be resorted to. I have known complete parching to result from neglect of this in times of long-deferred rain, where the divisions have been in fresh and unripened growth at time of planting.

(b) **By seeds.**—Seed pods are freely made by all these not elsewhere excluded, except *Atroviolacea* and *Cœrulea*. (Pods occasionally form on these, but only air and abortive seeds fill them.) Germination is good, and, with October sowing in a well-drained outdoor bed, seedlings will often bloom a year from germination. With a little persistence, discriminating elimination of the too squat, too large, and too thin-textured, and an eye for good-foliaged plants, interesting and delightful gradations of color may be created, as well as a series of varied fragrances which add to the pleasure of these small irises for cutting.

BEARDLESS DWARF IRISES

I. minuta.—Thought to be a horticultural variety, this small, beardless, early-blooming yellow iris from gardens in Japan is scarce and an object of quest by rock gardeners. Through the kindness of Mr. Lown it came to my garden — a tight little mass of small rhizomes and grassy foliage which I was uncertain when to divide, and nearly lost by division in early spring. Now I have discovered that midsummer, when it is in active growth, is the time. Severe division in early August results in no loss, every plant setting about at once to establish its own colony. I grow it under the same conditions of soil and position that I give to *I. gracilipes* — part shadow, moist, light, rich soil, and no lime. It thrives in some other gardens with more sun than I have given it. The roots cover themselves with small nodules like those found on leguminous plants, a distinction among irises borne by this plant alone. An iris for the eager grasp of an enthusiast rather than for the casual gardener.

I. verna.—This iris, found in the Carolinas and in Virginia, is, without doubt, noted by Thomas Jefferson at Shadwell in his garden book, April 1766: "Wild honeysuckles in our woods open, also the dwarf flags and violets." In that region of Virginia *I. verna*, so small, so sweet, and with a deep gold line on the dark lavender-violet falls,

grows in sun or high shadow, in woods or fields, careless of anything apparently, except lime, which it cannot endure. The foliage is ever-green, the rhizome, as well as the flower, suggestive of the small bearded irises; and botanists feel themselves justified in the theory that this elf (probably with *cristata* as a companion) started out from the band of American irises in search of a beard, some æons ago! However this may be, it is a charming small companion along a woodland path, where conditions of acidity are so easily made from mould of decayed oak leaves. I have, after much struggling, made it happy by this mould and soil from an old field that has not been under cultivation for years. The season of bloom is a trifle later than that of *I. cristata* — mid-May and later, and the height about four inches.

I. ensata. — A very early flowering beardless form, sword-like in its first sharp leafage, and blooming in late April and early May. The flowers are lavender, somewhat fleeting but produced over a long season. As a foliage feature, because of its great resistance to drought, "remaining green when every other perennial is parched,"¹ this plant should be a desirable addition to our gardens. It created something of a sensation at the Iris section of a show which I attended this spring — the only Apogon among the early bearded sorts shown. Quite decorative it looked, too, in a little Japanese bowl, though its pale lavender and rather small bloom would, no doubt, be overlooked at the time of the sibiricas. The leaves at full growth are extraordinarily long, and are twisted into twine as well as used for pasturage in some of the Asiatic districts in which it is found. It is the deepest rooting of all irises except a lately found form on a high dry point in Arizona, which Mr. Dykes named *arizonica*.

I. graminea (not the bearded Graminea). — A pygmy cousin of the stately *I. ochroleuca* of the *spuria* family, this opens its delightfully fragrant bloom fully two or three weeks before any other member of its family. It is always in bloom with the earliest of tall bearded irises, late May, and amid their splendor is never noticed until a bloom is broken off and proffered. It has the rich scent of ripe apricots, and despite the fact that the red-purple and lavender bloom is hidden among the foliage, it is a desirable iris for its foliage alone, which is low, drooping, and glossy. The plant is so easily managed in any soil it might well be used as low accents, or even as entire edgings. The bloom is attractive for cutting, because it carries with its flower scape a glossy green leaf, and in low Japanese bowls of ivory makes a dis-

¹ *Handbook of Garden Irises*. Dykes.

tinguished as well as delightfully fragrant decoration. Propagation is easy either by seeds or by division, which is best done in late August. The plant will seem to have disappeared, — does, indeed, from the surface, — but the roots are busy and it will appear in the spring and probably bloom. It takes some time, however, for a plant to attain full beauty of foliage, when at blooming time the flowers are so abundant as to ring the entire middle of the plant.

I. setosa. — My garden shared years ago the lovely blue form of this iris, lamented by Mrs. Wilder in *Adventures in My Garden and Rock Garden*. About a foot in height, it thrived amazingly and bloomed prodigiously. Unaware of the rarity in color, I allowed the seeds to be lost, feeling also secure in the robust plant. Whether due or not to an unintended scattering of lime I do not know, but it began to droop, and no attention could bring it to health. The red-purple form sent me from Alaska has been permanent over several years. If seeds of the blue form can be had from the east coast of Maine, where the type is blue rather than the red of the Alaskan form, other gardeners with a taste for experiment may have Mrs. Wilder's luck, which she says was once out of many sowings of seed that produced unattractive plants. From mid-May it blooms with two flowers to the stem.

Californian Irises. — Gardeners in other localities will find these interesting plants. "Interesting" is used in the sense of the amateur's interpretation as something difficult to do. I have gone from delight to depression with these fascinating irises, they are so beautiful, and remain hardy through unbelievable cold at times, and again succumb. A clump of *I. douglasiana*, raised from seed, has bloomed and made seed, and is increasing in girth, but others, which remained hardy, pined away in our cold late spring of last year. I have repeatedly lost plants shipped from California in spring and in autumn, and the best reliance is upon seeds, which germinate readily enough. Since these irises do so well in England, gardens to the south of Washington should succeed with them, and they are well worth effort. In my garden they bloom from mid- to late May.

I. missouriensis. — Native to the meadows of Colorado, which are moist in spring but dry in summer, this is not a difficult plant to manage in our Eastern gardens, and it lends interest to the mid-May bloom as one of the first of the Apogon group to open. The slender blossoms strike a new note in the border among the bearded sorts, and make inviting subjects for cutting. A rich border with sun and no lime will coax a height of eighteen inches, and there are a deep violet and a

white in addition to the lavender-flowered type. This is closely allied to the Californian *I. longipetala*, which is not difficult in our Eastern gardens.

CRESTED DWARF IRISES

The three members of this type which are hardy in my garden are of great beauty:—

I. cristata. — The rare beauty of this iris has been longer recognized, perhaps, than that of any other of our native irises. The leaves are rather broad, — about half an inch, — and make a lovely carpet of six inches or more through which appear the delicately patterned, slightly crab-scented, widespread lavender flowers, touched with gold. It is sweet-natured, and obligingly appropriates any soil or position, but loves afternoon shadow, good drainage, and gravelly humus. For use as a detail in rock gardens or as an irregular drifting border at the edges of broad-leaved evergreens, it is charmingly adapted. For full effectiveness broad drifts should be used, and these are easily obtained by a little patience in dividing and transplanting. With the exception of the three winter months, I have divided and transplanted this small favorite every month in the year and with success, but the quickest and easiest establishment comes from spring division as early as the work can possibly be done. When the small rhizomes are like little bronze-green turtles with tiny bright green legs — that is the time. Planted in rows or drifts five or six inches apart, the fibrous roots well under and the rhizomes just covered, at this season there is rarely need of watering; and before the summer is past each little green leg will have made a plant that should bloom the following year, while many of the original rhizomes will bloom the first season, as though undisturbed. Flowering in mid-May, Mrs. Wilder likes Iceland poppies near by, and Miss Jekyll suggests *Corydalis ochroleuca* as a neighbor, in pale yellow. I like it best in sun-splashed patches along meandering woodland trails. A little patience in weeding in such places brings a rich reward.

I. cristata alba. — This is rare, and still at a price to make the purse close thoughtfully. It is a gem for the plant lover and for the rock garden, a little more insistent on part shadow, humus, and general consideration than its bonny relative. The flower, slightly smaller in all its parts, is without the fragrance of the type. Seedlings give varied modelings and colors from palest to deep lavender, but as yet

I have had no white. Both the type and the variety *alba* make masses of foliage that are of value until September and later.

I. gracilipes. — “Oh, what *is* it?” is invariably the exclamation before a well-grown plant of this small woodland iris of Japan. Himeshaga, they call it there. The foliage is abundant, thin, and grass-like, and the slender, branched blossom-stems rise out of this to a height of eight or ten inches, carrying widespread lavender flowers, in size a little more than a silver quarter, marked by inlays of ivory and a deeper lilac, with a much fimbriated tiny linear crest on each lower petal. It will not thrive in dry, hot positions, and it suffers from heaving thaws in winter and early spring. If given a partly shadowed, moist, but drained position in a soil of loose, well-decayed vegetable matter with no lime, the growth is vigorous. The frontispiece of this book shows it growing happily under an apple tree, where it gets early morning sun. Some of the lower limbs on the tree have been cut since the picture was made. This, like all irises, needs air drainage. The best time for division is when the new roots are active — in my experience, July; examination will quickly show when. At other times it is not easy. Another trouble that gardens have in getting it established is the ever-repeated weeding-out for grass, and the neglect to mulch carefully against thaws. The rhizome is slender and thin, and anchored not very firmly by small, rather sparse roots. Another attention it should have is top-dressing with decayed-leaf soil. I do this in early spring as soon as the weather is settled, and again in late June to give something for the new roots, starting from the backs of the rhizomes, to catch quickly. It grows contentedly for me also in a position where there is direct sun upon it for two hours in the hottest part of the day. The soil is deep and rich and unlimed. No trouble is too much to make this plant comfortable. To succeed with it there must be shadow for a part of the day and the weeding must be done with fingers propelled by love. As is noted in the picture, *I. gracilipes* is a little later in bloom than *cristata*, which is showing a last blossom at the forefront. I frequently find self-sown seedlings, and from some sowings of seeds, as soon as ripe, secure good germination. At other times the seeds fail. For partly shadowed nooks in the moister parts of the rock garden and for choice small borders it is a treasure. My enthusiasm for this plant is great, so perfect in harmony of proportion are rhizome, leaf, stem, and flower, and so well does it fulfill its mission as a Lilliput decoration, from the early appearance of the tiny green points until November frosts subdue the graceful foliage.

I. tectorum. — I believe that the bloom of the white variety of this iris calls forth more delighted praise from plant lovers than any other iris in my garden, except *I. gracilipes*. The foliage is broad, — more than an inch, — heavily ribbed, and thin. This is rampant and heavy during the summer, but is shorter at blooming time. The stems carry the widespread crested flower, touched with yellow, to a height of twelve or fifteen inches. I succeed with it in the full sun in rich soil, and it does not flee lime. It is occasionally injured by winter, when I have forgotten to give it the slight protection of leaves held down by brush which it appreciates. I am about to come to the conclusion that we have been influenced by the cultural implication in the name to give more sun than is required. Mr. Dykes hints that it may like part shadow and leaf mould. E. A. Bowles in his delightful *My Garden in Summer* says: "It never did much in the rock garden ledges that I thought it might take for roofs, and then a friend said it did well with him in partial shade, and I tried it under a lopsided sycamore, and it thrived marvelously until I cut down the sycamore. Every other neighboring plant rejoices in the departure of that sycamore, but *I. tectorum* has pined away, grieving for it ever since its fall." I am this year trying some in a rich spot at the south of a small building, where it has the noonday sun only. One secret of success is frequent division and enrichment of the soil. Resetting is best done soon after flowering, or in August. It is an extremely shallow rooter, and probably found the rotting thatches of Japanese roofs more agreeable food than our hot rock-garden ledges afford. I have seen it growing well at the top of a terrace, in a garden where small shrubs at the north gave it protection. The type is blue lavender blotched with purple, and not so beautiful as the white, though they are good together. It is an especially delightful iris for cutting; the delicate beauty rewards close inspection.

IV

TALLER IRISES — EARLY MAY TO LATE MAY

Intermediates. — Working in Northamptonshire, W. J. Caparne crossed many of the early and low-growing species with the tall bearded and later-blooming iris, forced for the purpose. This interesting work resulted in the introduction in 1901 of a set of irises which he designated as “intermediate,” meaning by that intermediate in size and height, as well as in time of bloom. The set, including such varieties as Prince Victor, Queen Flavia, Dorothea, Charmant, and Ivorine, created something of a sensation among garden lovers in England, from whence they soon found their way to the United States. Within a few years a similar set was sent out from a firm in Germany, among them Fritjof, Gerda, Halfdan, Ingeborg, and Walhalla. These take up the bloom before the last of the lower-growing, like Statellæ, have quite finished, carrying on for a period of ten days or two weeks, and lifting the bloom from ten and twelve inches to fifteen, twenty, and even more. They may always be counted in the picture with Darwin tulips, and in the small garden that has to consider expense may well be substituted for these tulips, to give bloom from early in May to well past the middle of the month, when the later and taller irises pick up the color. The initial cost may be larger, but the irises increase and are relatively permanent. The pinks and rose colors of the tulips are, of course, not included, but ivory-white, pale yellow, violet-purple, almost black red-purple, blue-purple, and gray-whites give lovely material. Of these older varieties my favorites are: —

Ivorine (Caparne, 1901). — Fifteen to eighteen inches, warm white, flower in proportion to stem and carrying a touch of yellow in the falls.

Gerda (Goos & Kooneman, 1910). — Pale yellow, lifting its bloom well above the foliage on eighteen-inch stems, which Queen Flavia does not do — in my garden at least.

Golden Fleece (Caparne, 1901). — Another good clear yellow on twenty-four inch stems.

Fritjof (Goos & Kooneman, 1910). — The best of the blues in this early class. The bloom extends over a long period and has far more distinction in color than Walhalla, though this last is free and valuable for cutting, also for forcing in a sunny window. Both are about twenty inches.

The past few years have contributed to this class of early and mid-May irises a few of great beauty: —

Sapphid (Sapphire, Dykes, 1922). — A deep blue self of twenty-four to thirty inches, much liked by discriminating critics.

Soledad (Mohr, 1924). — A fine yellow, originating in California, but perfectly hardy in Eastern gardens. The color is deeper than most of the yellows of this group and the stems reach twenty-four inches.

Zwanenburg (Denis, 1909). — *I. susiana*, the weird Mourning Iris, is one of the parents, and yellow *lutescens* is the other parent, of this tan-gray and gold flower, touched with brown-purple. It is fascinating in color and delightful in shape, perfectly hardy and very floriferous, reaching eighteen inches. Of the small red Japanese maples that intrude on our soft spring landscape I have never been fond, but this iris so reminds me of a certain Hiroshige print in gray tans, bronze greens, and reds, I am always wishing I might have a sunny ledge, to be come upon suddenly through slim dark cedars. At the back should be spreading scarlet maples, and just out from their branches, in the sun, drifts of iris Zwanenburg.

Blooming a little later than these intermediate irises are some older varieties and species that are valuable both for themselves and for long associations: —

I. florentina. — An old, well-known, large, gray-white, that is beautiful, constant, and fragrant. The flowers age badly, but the whole plant has great dignity. "I never see *Iris florentina*," said a beautiful woman (herself a grandmother) in my garden this spring, "that I do not at once also see my grandmother in a black silk dress, the front filled with blond, and a lace cap with long streamers, walking down her garden path." In long-neglected clumps, where the rhizomes

have been unable to get strong hold of the soil, the bloom stalks tumble about, but in well-grown plants this is not a habit.

I. germanica. — This old blue flag, with *florentina*, known for more than three hundred years in gardens, has a quality of endurance under adverse conditions that may well yet put to rout some of our "improvements." It makes fine autumn and winter foliage, — a point to be considered in regions of little snow, — is free, and when well grown, a fine color. It is to be regretted that it is being dropped from lists.

I. albicans. — Still one of the whitest of irises. In congenial soil and position, — well drained and warm, — and with rather frequent division, it is a satisfactory plant; but unless this attention can be given it will prove fickle in Eastern gardens. In California it is often in flower in February and lasts till Easter. In our more southern gardens it should be valuable.

I. kochi. — A much admired black red-purple, twenty inches, and very free.

Crimson King. — A brighter red-purple than *kochi*, and a larger flower.

Mrs. Alan Gray (Foster, 1909). — A soft pale rose-lilac iris that is exquisite with *kochi*. From twenty-four to thirty inches it grows, and wishes to be let alone to form heavy mats of rhizomes. Established plants in my garden frequently give an August bloom.

I. hoogiana (Dykes, 1919). — An easily managed and hardy form of the Regelia iris (see Chapter IX). Mr. Dykes calls this the "most aristocratic of all irises." A fine-textured flower of lavender blue with a gold beard, and on stems from eighteen to thirty inches high. I have found it absolutely hardy, and it has bloomed several seasons without summer lifting and with increase. It was discovered in southern Turkestan in 1913.

William Mohr (Mohr, 1925). — Mention should here be made of the recent novelty which the late Mr. Mohr, a California breeder with fine work to his credit, considered his greatest achievement. I have not seen this, but competent critics consider it notable in the combination of the less hardy oncocyclis *I. gatesi* of northern Mesopotamia with the vigorous and hardy tall bearded variety, Parisiana. Suggestive of *I. susiana* without its gloom, in pale lilac veined thickly with deeper violet, it should be a fascinating plant for the iris lover who likes the rare and unusual. It has been grown and flowered successfully in light, well-drained soil in some Eastern gardens, and promises to be, like *susiana*, a good plant for forcing.

V

TALL BEARDED IRISES — LATE MAY TO EARLY JUNE

ON this class of iris our gardens rely for a perennial to give bloom between the time of the tulips and that of the roses. Rich in varied color and size of bloom, in height and carriage of stem, with an unequaled architectural value in foliage throughout the season, it well merits the enthusiasm of those who know it best.

With the flood of new introductions of varied ancestry, a classification based on parentage as formerly is no longer practicable, nor do the limits of this book permit or the needs of gardens demand its discussion. Certain terms, however, appear in catalogues and in magazine articles, and are more or less current coin in any discussion of irises. These should be mentioned here.

(1) **Species.**—These are wild forms, many of which are grown in gardens for their beauty. *I. cristata*, *I. lævigata*, *I. longipetala*, *I. gracilipes*, *I. hoogiana*, are examples. Others are valued and known best by the contribution they have made to our horticultural varieties. *I. pallida*, *I. variegata*, *I. cypriana*, *I. mesopotamica*, and *I. ricardi* are examples.

I. pallida (Lamarck, 1789). — A pale species with relatively broad and usually glaucous foliage, the large, fragrant flowers held close to the tall, stout stem, and the buds enclosed in silvery-white papery spathes that sometimes frighten the uninitiated. A form of this species with dwarfer habit and earlier flowering is *I. cengialti*. Both enter importantly into the garden forms of bearded iris. "Of cengialti parentage" implies the earliest blooming of the tall bearded iris.

I. variegata (Linnæus, 1753). — This is an extremely hardy species,

and so distinct in its yellow standards and yellow falls, variegated in stripes of brown or of purple, there are no botanical synonyms. The foliage is rather thin and conspicuously ribbed. This, with *I. pallida*, enters into many of our older garden forms.

I. mesopotamica (Dykes, 1913), and *I. ricardi* (considered a variety of *I. mesopotamica*). — These are very tall-stemmed, rather coarse, large-flowered forms from Asia Minor, that have entered conspicuously into many of the later introductions from M. Denis working in the South of France and from the late Mr. Mohr working in California. The general value of these as a class for gardens in the North and East is still under trial. Gardens that can give either natural or artificial conditions of well-drained and warm sites report fair success, and gardens in the South should succeed admirably with as little effort as ours in the North do with the older forms. Also, time will bring varieties with less infusion of the warmer-blooded irises, that we may easily cultivate in our colder gardens.

(2) *I. germanica* (Linnæus, 1753). — “An abstraction from a group of varieties,” this is not considered a distinct species by Mr. Dykes. This hardy purple-flowered iris is the most widely known and cultivated. Through a large-flowered form collected in Asia Minor, *I. macrantha*, we have varieties with bloom of great size on stalks not usually exceeding thirty inches. Oriflamme (Vilmorin, 1904) is a notable and popular example.

(3) *I. trojana* (Kerner, 1887). — This plant from the Troad has never been found in a wild state. Its widely branching habit attracted hybridizers, and the fine variety Alcazar (Vilmorin, 1910) is one of the best-known resulting garden varieties. “Of Trojana parentage” has come to mean wide, low-branching, and usually late bloom.

(4) *I. cypriana* (Baker and Foster, 1888). — This iris, coming to Sir Michael Foster from Cyprus, was used by him with *I. pallida* to produce two irises well known in commerce: Caterina (named for the Queen of Cyprus) and Lady Foster (1913). It has been confused with *I. trojana*, and the two irises introduced by Foster have not proved easily grown in the average garden

of the North and East, though they are admirable in California, and varieties with a less infusion of *I. cypriana* (derived through Caterina) make hardy though often slow-growing plants.

So much for the species and the blood entering into the present varieties of commerce.

Of the flowers themselves, the terms below are in current use as to color distribution: —

Self. — Standards and falls of same color in effect, though often the falls are a bit deeper in tone. Examples, *pallida dalmatica*, Parc de Neuilly.

Bicolor. — Standards and falls of different colors or of different shades of the same hue. Examples, Thorbecke, Archevêque.

Plicata. — White, with standards and falls showing stitching at edges, and the style branches usually conspicuous with the color of the marking. Examples, Madame Chereau, Jeanne d'Arc, True Charm.

Blend. — “Changeable silk” is an old term to which the varying hues of yellow and violet in different proportions in a blended iris correspond. “Shot shades” the English call these. The predominating color determines red blends, yellow blends, pink blends, violet and bronze blends. There are occasionally “self” blends, as in Afterglow, where the color of the standards and falls is the same soft mingling of yellow and gray, sometimes a *plicata*, as in Madame Chobaut, but oftener bicolor with the falls repeating — but in far greater intensity — some hue in the blended standards. Quaker Lady is an example in light, Prosper Laugier in dark, bicolor blends.

The varied forms of this class, with types of stalk, are shown in Fig. 5.

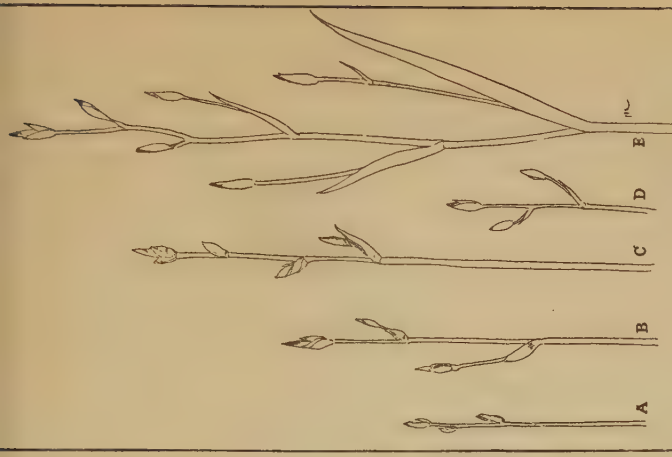
CULTIVATION

The methods of culture outlined here are those that are adhered to as far as possible in my garden. Lack of time and of



Figure 5. Varied forms of bearded iris bloom, illustrating carriage of standards and falls

From left to right top row: S. flat; S. overlapping; S. arching, cupped; S. conic
 Bottom row: S. cupped; S. tips adpressed; S. floppy; S. domed, overarched
 Falls in top row are: drooping in 2; straight-hanging in 3; flaring in 4; and in bottom row, reflexed in 4¹



Types of stalks

A, *Iris cengialti*; B, *I. germanica*; C, *I. pallida*;
 D, *I. variegata*; E, *I. trojana*

¹ Adapted from Bulletin 6, American Iris Society.

adequate labor often make departures from schedule necessary, and no perennial is more patient or ready with sympathetic assistance than the bearded iris.

Position. — The Big Three in the culture of the Pogoniris are usually written: sun, lime, and sharp drainage. I would reverse the order of writing to sharp drainage, sun, and lime. Good drainage, both air and soil, will give fine results with only two or three hours' direct sun at the hottest part of the day, while sun all day long in a stagnant, waterlogged soil spells failure. Realization of the fact that Pogoniris needs hot sun only a part of the time aids much in the attractive arrangement of a garden. The high shadow of distant trees may be taken advantage of, not only for varieties that fade badly in the afternoon sun but to prolong the season of bloom. Small crab-apples, cherries, roses on posts, pear and peach trees, are used in my garden to make light shadow and to break the lines.

Sun, of course, culturally cannot be overdone, and to this fact we are indebted for valuable garden material in sun-smitten places where little else will grow, but for health the irises do not need it all day long. In a position of *high shadow with sharp drainage*, varieties like *florentina*, *pallida*, *germanica*, Othello, and Her Majesty bloom madly for me, with not more than three hours' direct sun at mid-day. I should not expect much of varieties with the blood of *I. ricardi* in such places, but any free-blooming variety will do well. There must be no dankness, and there must be annual feeding.

Soils and Fertilization. — There are few preferences in soil. Sandy, gravelly soil should have the enrichment of wood soil or compost. Some good gardeners use well-rotted manure, and there can be no objection to this *if* — and it is a big *if* — the manure is well dug under, is not fresh, and does not come in direct contact with the rhizomes. I do not use it. If I could

afford such a luxury, I would save it for plants that need it more. Vegetative growth is stimulated and ripening retarded by the use of nitrogenous manures, and this invites rot. Wood ashes, scattered freely in winter, are used by some good growers, and others use a light application of a good potato fertilizer in spring. Heavy soil should be lightened by sand or even by hard coal ashes. I use both. The sand is that brought from a gravel pit. Only the larger stones are removed; egg and walnut sizes are left if not too abundant.

Deep preparation of soil is necessary, not that the roots may go deeply, for this form of iris is not deep rooting, but that water may find easy and quick outlet.

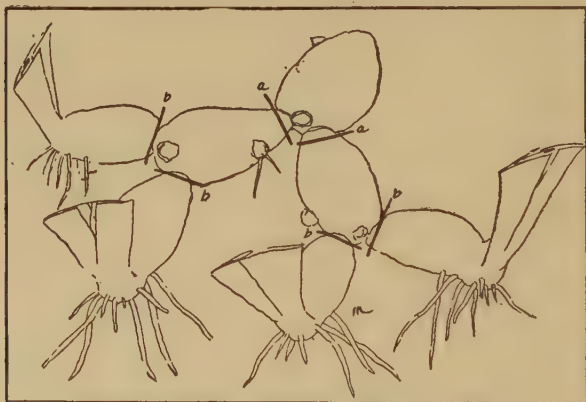
With the exception of the use of compost to improve the texture of soil, I depend on artificial fertilization and use almost entirely bone meal. It is safe and comparatively permanent with annual applications. A mixture of bone meal and hydrated lime — equal parts by weight, or four of bone meal and six of lime by measure — is kept on hand for the bearded iris. Because I grow large quantities of iris on a small space, I use this mixture liberally in new plantings, and in annual applications at the rate of about four quarts to 150 square feet. It makes little difference whether it is raked into the bed before planting or applied on top. The Pogoniris is a long- but shallow-rooting plant.

PLANTING

Time. — The counsel of perfection is immediately after bloom. If this can be done, good bloom will result the following May and June, and fresh memory of colors will help arrangement. It is often physically impossible, and some gardeners do not like to tear up the garden at this time. Late July, August, and September are satisfactory. These are decidedly the best

months for plants that have to be shipped from nurseries. New roots are starting and they quickly become anchored. Of all seasons I dislike early spring, unless in one's own garden it is desired to lift and replace for garden effect an entire clump for the season's bloom. Nothing is gained by spring planting over August; rhizomes torn up in April will not have root anchorage to give good bloom in May.

Caution about arrival of roots. — Pogoniris roots prepared for shipping are shortened both in leaves and in roots,

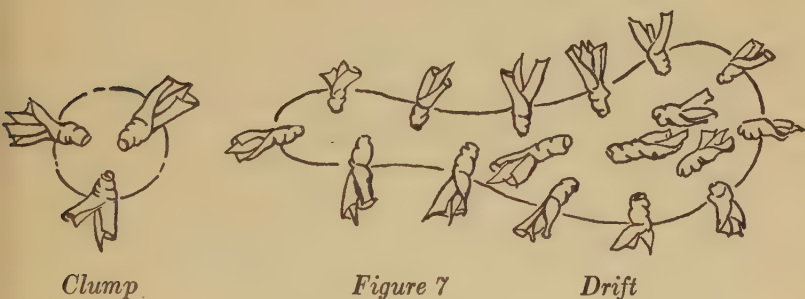


*Figure 6. Diagram for division of rhizomes
For moderate division break apart at (a), for full division break
apart at (b)*

with absolutely no harm to the plant. They are shipped dry, usually in excelsior, to avoid mould and rot. On arrival they may be very dry, but if firm they may be expected to do well. If beds are not ready, "heel in" — which means planting temporarily close together, in a sunny, not shady place. The Apogons are shortened in the same way for shipping, but are packed in damp moss and need immediate attention, either in temporary or in permanent planting, with careful watering. Any drying-out is fatal for this type of iris.

Method. — Fig. 6 gives a diagrammatic illustration of the best division of an old iris plant, and Fig. 7 shows two forms of arrangement for the usual purchasable rhizome of a single fan or at most two fans. From a single root it will take three or four years to get an effective plant carrying ten to fifteen stalks. To hasten the effect, plant three or five or seven, six to eight inches apart, and to give finish as well as better root-direction, turn all growing points outward.

Spread roots as much as possible and plant shallow — no deep holes with all fibrous roots hanging down in a cramped



bunch or turned into a bunched loop to fit a shallow trench. The roots are shortened, as shown, to facilitate planting properly. We usually cover the rhizome slightly. It helps to anchor newly starting roots, and rains soon dispose of the half inch of loose soil on the back of the rhizome. If the season is excessively dry, it is better to water to settle the soil and to start growth. In normal seasons it will not be necessary.

MAINTENANCE

No perennial is easier to maintain. Do not fork deeply about iris, because roots are both shallow and long-searching. Well-established plants will often remain contented and bloom

for years. Lack of bloom from an old plant is the signal for replanting.

Do not be frightened by bare rhizomes. They love the sun on the back as the turtle on the rock in the pond loves it. Keep all dying leaves and encroaching plants away, to lose no ray of the summer and autumn sun.

Established plants need no winter mulching. Autumn plantings should be mulched. Use leaves held down by branches, straw, evergreen boughs, or even corn stalks, but never a vicious, soggy mess of bacillus-bearing stable manure. I make no attempt to remove foliage that droops from the frost or leaves that drift in from the trees. These aid my annual practice of early spring burning-over.

In early spring, after cleaning, I make an annual application of the bone meal and lime mixture. This is scattered broadcast — the effect, a light April snow. We try to do this just before a rain, and no effort is made to keep it off the rhizomes. Where cultivation can be done, it is lightly scratched into the surface and the rest left for the rains.

LABELS

The best and most permanent labels I have found are those made by a friend's chauffeur, and I am often the delighted recipient of a bundle from her. Zinc in coils, cut in inch or wider strips, is kept on hand. This is easily cut by any strong shears into three or three-and-one-half inch lengths. A round hole is punched in one end. Number 8 galvanized wire — No. 8 is better than the sometimes recommended No. 9, because it bends less easily with knocks from operations in the garden — is cut into lengths of eighteen inches or two feet. A ring is made at one end into which the strip is slipped and the loop is tightened against the stake. These are thrown out to weather for a

month. Smearred thinly with white paint and written on while wet, these labels last indefinitely. Mr. R. T. Jackson was the first to call my attention to this style of label, and I have in the garden one from him which has stood in its place six years and is still perfectly legible. They may be pushed down among the foliage of the iris and practically hidden.

SELECTION OF VARIETIES

There is a feeling among those who have grown irises longest that it is better to see before buying. Fortunately, this advice can be heeded more easily now than ever before, because of the many fine collections in parks and in botanical gardens as well as in the gardens of specialists who sell roots. However, one of the pleasures of buying a new plant is "to see!" There are excellent catalogues that reflect long and intimate acquaintance with a number of irises, and in which opinion is honestly expressed.

My personal preferences are for clear colors, varied forms of flowers rather than one set type, with stalks not thick and heavy but firm enough to be faithful to their burden of bloom. Alcazar has this poise and fine breeding apparent in the whole plant. Asia and Prospero will kiss the ground with a day's heat which leaves Alcazar untouched. I give the large flowers their full meed of admiration, but a garden dedicated chiefly to the giants is as devoid of charm as would be a dinner party made up of Brobdingnagians. A mass of Magnifica, for instance, is an unpleasant aggregation of huge, slab-like petals, while a single clump is an imposing object — if you like Magnifica, which I do not!

A limited twelve from hundreds leaves out so many fine things that making such a list imposes an anxious sojourn between Scylla and Charybdis and a fervent wish to be out of it.

In my own garden, there has never been time to work out gradations of color, from creamy pink Wyomissing and pale Aurora to the wines of Edouard Michel and Opera; from the pale blue lavender of Yvonne Pelletier or Celeste to the black violet of Souvenir de Mme. Gaudichau; or through warm whites, creams, yellows, and bronzes. All these delightful things I hope age may give me leisure to try — and I am confident that I shall get into color tangles from which only my patron saint can relieve me!

With the soft lavender of *pallida dalmatica* as the *leitmotiv* — because it is beautiful and because it was one of the first irises I owned — and pale yellow *flavescens* as a peacemaker with deep violet Othello (not rated very high by the symposium, but to date the best late dark massing iris I know), with warm white Innocenza and Her Majesty, a still unsurpassed rose-color in carrying quality as well as vigor and freedom, a background is made in my garden for the newcomers, some of which we allow to tarry after time has shown their quality. A single spike is never a sufficient test.

Of the irises shown in the garden plan (page 78), I have sent none to the compost heap, and most of them hold a high place in the garden. I could do without Anne Leslie or Iris King and still be happy. Concerning Shekinah my enthusiasm is great — it is exquisite in mass as well as in the individual.

Because of the soft clear yellows and warm ivory tones which Miss Sturtevant has given us in the tall bearded irises, our gardens will be increasingly lovely as the years go by.

If I were starting a new garden and felt that I could only add twelve to the foundation five mentioned above, they would be:

For earlier bloom. — Miranda (Newlands, 1919), 36 inches, a fine blue-violet *cengiali* type, and Bluet (Sturtevant, 1918),

27 inches, a pale blue lavender of the same slender-stemmed and delightful type.

For midseason bloom. — *Souvenir de Mme. Gaudichau* (Millet, 1914), which is depicted among the irises in the garden plan.¹ *Shekinah* (Sturtevant, 1918) and *Alcazar* (Vilmorin, 1910), both described in garden plan. *Taj Mahal* (Sturtevant, 1920). This is an outstanding white iris, vigorous and free in bloom, a white that carries well and is nearly if not quite three feet high. *Afterglow* (Sturtevant, 1917), a free-blooming vigorous plant with a flower of gray and gold on three-foot stems. This has great appeal, suggesting in its restraint of color a Japanese print. It carries in the distance better than most blends do. *Ballerine* (Vilmorin, 1920) is a sumptuous lavender bicolor, with none of the slab effect in the lower petals that many of the large flowers have.

For later bloom. — *Delicatissima* (Millet, 1914), a pale rose pink *pallida* of fine erect habit and deliciously fragrant. *Corrida* (Millet), 36 inches, the best late pale blue I know. *La Neige* (Verdier, 1912), 20 inches, a late white of such beauty that, despite its greater happiness in a bed raised by builder's sand, I feel I must have it. For cutting it is exquisite. *Ambassadeur* (Vilmorin, 1920), which is referred to in the garden plan.¹ For its poise and fine color, I should have to make a setting. I have seen little boys stand, cap in hand, before a good plant of this iris in full bloom.

As I write this last "must have," I am reminded of a warning written some three years ago by Mr. J. Marion Shull: "If you would avoid becoming an iris enthusiast, never let yourself acquire beyond the fifth variety — more than that will lead on and on into a veritable garden of enchantment." With restraint thrown to the winds, I should have to have,

¹Page 78.

among the blends, *Reverie* (Sturtevant, 1920), a finished pink-flushed buff-and-red of good carrying quality. My only criticism is the thick stalk; *Steepway* (Scott, 1922), 42 inches, a small flower with indescribable blue and green and buff reflections; and *Mme. Cheri* (Sturtevant, 1918), 42 inches, a pink-toned gold-warmed beauty.

In the yellows, *Virginia Moore* (Shull, 1920), the standards of which suggest a lighted window, would be added to *Gold Imperial* (Sturtevant, 1924) and *Old Ivory* (Sturtevant, 1924); indeed, if I were perfectly reckless, I would add still more of the new soft yellows, of so great value do I consider them in a garden of irises.

In the bicolors with white standards and dark falls, to the old *Thorbecke* (about 1897) I would add *Mary Williamson* (Williamson, 1918), 33 inches, so charmingly ruffled and distinct, and *Mildred Presby* (Farr, 1923). Of the darker bicolors, the beautiful *B. Y. Morrison* (Sturtevant, 1918) would be my choice.

In the plicatas, to *Jeanne D'Arc* (Verdier, 1907) or *Ma Mie* (Cayeux, 1906), I would add *Damozel* (Morrison, 1922) or *True Charm* (Sturtevant, 1920).

In the pinks, for a choice small garden *Wild Rose* (Sturtevant, 1921), 33 inches, and for more distant effect *Susan Bliss* (Bliss, 1922), 39 inches. The first is lovely and not rampant, while the second is a strong grower.

Mother of Pearl (Sturtevant, 1917) is a fine pale lilac, suggesting *Aurora* in the garden. It has the same fault shown by *Mlle. Schwartz*, of leaning flower stalks.

If I were writing this list five years hence, with the flood of new introductions at this transitional stage of development of the *Pogoniris*, it is possible that I might not include some of these; but I believe that they all have qualities that will make

them valued plants in gardens for many years. Some of them are found in the lists of general nurserymen and all in the lists of good specialists.

A beautiful planting can be made of only the five enumerated as the groundwork of my own garden. All of these are inexpensive and found in almost any general nurseryman's list.

"Just what makes a good iris?" is a question often asked, and perhaps as variedly answered. There are points upon which, considering all flowers critically, opinions differ little, though within some of the points themselves there may be wide latitude of choice. Size, color, substance, form, and fragrance make the usual basis of estimate. Size is, I think, a relative matter, and has to be considered in connection with the height of stalk, form, and substance of flower. Among large flowers, Lord of June invariably captivates on first view. The color is good, the height of stalk is in proportion to the huge flower, and the form of flower very good; but there is rarely substance enough to keep the form, and the bloom assumes a floppy and dejected air out of keeping with the splendor of the inception. Substance has to do with the thickness or thinness of the petal tissue, and large flowers are more dependent upon this quality than are smaller ones; its presence, though, always adds value in greater resistance to heat and rain and often in the satin-like smoothness of the petals.

Color is a matter of personal choice, but there is a certain unanimity of opinion that self colors should be clear, bicolors be those that go well together, and blends be combinations of tints lovely in themselves and harmonious in combination. Colorists assure us that any color is good, give it the right surroundings; but with such varieties of iris as Eldorado and Demi-deuil the small garden has no room to experiment.

Form gives almost as much latitude for choice as does that of color. It concerns the relation of the standards and the falls, each to the other, and their placement and bearing in the flower as a whole. Between the languor of *Isoline's* long segments and the alert vivacity of the stiffly held, widespread parts of *Sweet Lavender* there is wide range of choice.

Another element to consider in the critical selection of an iris is the quality which in people and in dogs and in horses we call breeding — a certain perfection of proportion and consistent adherence to a well-defined plan. Among tall and large irises *Alcazar* (early) and *Ambassadeur* (late) are conspicuous examples of poise and breeding, while *Mlle. Schwartz* and *Sindjkha* rarely carry an upright stem — a hoydenish tendency we may forgive in a small plant like *Tom Tit*, but not in plants patterned on such superb plans.

Of fragrance again there may be diverse interpretations. Many irises add scent to their other attractions. It is particularly noticeable in the irises belonging to the *Pallida* types and frequently in those of *Trojana* progeny. That of the *Pallida* types is more pleasing than that of those influenced by *Trojana*, and a distinct and delicious fragrance belongs to the variety *Archevêque*, which is imparted to a series of seedlings in a marked degree. *Fairy* I have long considered the one iris whose fragrance was liked by all, but only now I have heard of an iris collector who "cannot stand it"! *Caprice* is intensely pervaded by the fragrance of vineyards. "I smell ripe grapes!" cried a little freckle-faced boy standing near a planting of this in my garden last summer. If an iris may have fragrance, it is an added attraction certainly, but the lack of it is not condemnatory.

LIST OF GOOD TALL BEARDED IRISES ARRANGED BY COLOR

Blue-toned, pale to deep

Celeste, 36 in.
Argonaut, 30 in.
Silver Mist, 20 in., early
Bluet, 27 in., early
Corrida, 36 in., late
Drake, 36 in.
Princess Beatrice, 36 to 40 in.
Ballerine, 48 in.
Chester Hunt, 34 in., late, veined
bicolor
Baronet, 40 in.
E. H. Jenkins, 45 in., outstanding
well-branched bicolor
Crusader, 42 in., a little miffy
Blue Jay, 36 in., very late; veined
bicolor
Benbow, 36 in.
Joya, 30 in.

Violet and violet-purple

Juniata, 48 in., superb foliage
Gertrude, 36 in.
Odoratissima, 36 in., old and good
Miranda } near in color, 30
Princess Royal } to 40 in., early
Mandaliscæ }
Tom Tit, 18 in., late for a *cengialti*
Parc de Neuilly, 36 in., late, touched
plum, fine
Othello, 32 in., small, late, rich
bicolor
Souvenir de Mme. Gaudichau,
early, superb

White

Innocenza, 34 in., late
La Neige, 20 in., late
White Knight, 24 in., easier to grow
than La Neige
Taj Mahal, 36 in.
Milky Way, 36 in.
Cygnet, 48 in.
Athene, 33 in.

White in effect

Fairy, 40 in., late
Jeanne d'Arc, 34 in.
Ma Mie, 34 in.

Pale claret to deep velvety wine- red

Harriet Presby, 48 in., fine
Caprice, 30 in., intensely fragrant
Edouard Michel, 36 in., fine, needs
warm location
Opera, 30 in., rich bicolor
Seminole, 30 in., brighter than
Opera, fine

Pink, creamy to deep violet-rose

Wyomissing, 20 in., lovely in mass
Aurora, 48 in., fine
Wild Rose, 32 in., not robust in
East but worth extra care
Delicatissima, 36 in., late, beautiful
Dream, 36 in., late, good grower
Susan Bliss, 39 in.
Queen of May, 34 in., old, early, and
good
Her Majesty, 24 in., late, free, and
good
Georgia, 33 in., early
Aphrodite, 42 in.
Mt. Penn, 30 in.
Roseway, 42 in., early, good in dis-
tance

Pink-mauve

Phyllis Bliss, 24 in., unusual and
delightful in mass
Lohengrin, 34 in.
Prince Lohengrin, 36-38 in., better
than Lohengrin in habit, same in
color

Yellow

Flavescens, 34 in.	} Arranged in sequence from pale to deep chrome, all fine
Flutter-by, 30 in.	
Shekinah, 34 in.	
Virginia Moore, 30 in.	
Aurea, 30 in., late	
Gold Imperial, 35 in.	

Blended tones

Afterglow, 36 in., fine	} Lighter tones
Steepway, 42 in., delightful	
Mme. Cheri, 42 in., pink-toned	
Reverie, 48 in., finished flower color carries well	

Isoline, 36 in., pink, rose, and brown, lovely — and miffy	} Deep tones
Jacquesiana, 40 in., old and excellent	
Prosper Laugier, 34 in.	
Arnols, 32 in., old, fine, dark accent	
Colonel Candelot, 36 in., small, fine with Susan Bliss	
Medrano, 24 in., smoky wine-red, intensely fragrant, slow	} Both superb
Alcazar, 42 in., purple in ascendance	
Ambassadeur, 40 in., yellow-red in ascendance	

VI

SIBERIAN IRISES — LATE MAY TO EARLY JUNE

It is unfortunate that *Iris sibirica*, one of the most adaptable of the Apogon tribe, in its many forms is not more grown in our American gardens. "Veritable fountains of grace," Mrs. Wilder calls them. They are the easiest of irises to please, and most floriferous. The colors range from white to deep violet-purple and to red-purple. Some of the pale blues and the clear blues like Perry's Blue are exquisite. The slender stems and the numerous flowers with the narrow grass-like foliage make them ideal for cutting. They range in height from twenty or twenty-four inches to five feet, and the foliage is a valuable asset throughout the entire season. The beautiful structural effect of these irises is shown in frontispiece and in Emperor of plate opposite.

Botanists give to this type the distinction of being, perhaps, the oldest form of iris. It is widely spread throughout the centre of Europe, but like *I. germanica*, which in origin knew not Germany, *I. sibirica* never saw Siberia.¹ It is confused with another plant *I. orientalis*, found in Manchuria and Japan. Both are valuable in the garden, and the new forms now being introduced from crosses of the two plants are supremely lovely.

Cultivation and Situation. — The closely matted fibres of the root system about the thin rhizome indicate a moisture-loving plant, but after establishment it will stand an astonishing amount of dryness, enduring without flinching the same conditions of soil in the gardens that are provided for the Pogoniris.

¹ *Handbook of Garden Irises*, Dykes, page 92.

While I use this type all about the garden, I am careful to avoid thin, dry places for it, and find that it accommodates itself to positions of shade, — high shade with good air drainage, — provided there are a few hours of direct sun and the soil is good. It will grow, but will not bloom, in dense shade. It adapts itself admirably to conditions in the general hardy border, and should be left alone to make fine full clumps. Two years are needed for bloom at full height after transplantation, and a planting will continue to give bloom for many years if given a little care. *I. orientalis* Emperor, used as a sentinel at the end of a border of lower-growing plants, has been kept in fine vigor and within bounds for ten years by taking pieces off from the sides and filling the holes with rich compost. I also use bone meal and tankage — a valuable nitrogenous fertilizer much favored by the rose growers in this community — to feed these irises.

The number of bloom stalks is sometimes truly amazing. A three- or four-year plant of *I. sibirica* Grandis will send up as many as fifty; with this drain, it is only kindness to feed liberally. A “wild” planting made from seedlings set twelve years ago is still in good health and gives free bloom. The only care it gets is the removal of large weeds, burning over at the earliest possible moment in March, both to clean quickly and to take care of any possible borer’s egg, and a generous application of bone meal or acid phosphate with tankage raked in after the burning. It is suggested by good authorities that bone meal be not used on these irises. I use it constantly in connection with material from the compost heap and see no bad effects.

Best Time to Transplant. — Late August and early September is, in my experience, the very best time. The details of propagation are those given for Japanese irises (page 63). Care

must be taken to use no lime, and to set the crown two inches below the surface. Spring planting may be done, but is attended with risk of loss. Dividing and planting immediately after bloom as we do for the Pogoniris has, in my experience, been with entire loss in some instances. A friend sent me six plants of Red Emperor in early June. The journey was but two days from the digging. Every plant refused to grow. When Emperor was selling at a price equal to the hoard in the toe of the stocking, I thought to increase it rapidly, and divided it immediately after blooming. Some grew, but more died. I think I have never lost a plant, however small the division, when made in late August or early September.

Growing from Seeds. — Seeds form abundantly, because the plants are equipped for self-fertilization. In restricted garden space these may not be allowed to sow themselves about, because of the plague of young plants that spring up in the borders. Like seedling phlox, they do not yield readily to the finger pull, but need a little help with a fork. I allow the pods to remain for a while because I like them, but on some crisp cool day in early summer the stalk is snapped off at a point below the leaves.

So much for the riddance from chance seedlings; but in my iris-growing experience I have not had more pleasure in any adventure than from a few pods of *I. orientalis* Emperor and one pod from a cross of Emperor and Snow Queen, sown carefully in late October out of doors in a little stone-ringed spot. The plants appeared thickly the following spring and sixty were transferred to a nursery row. That was eight years ago. I am still selecting types from that row for special needs: a beautiful four-foot white, a dark violet pygmy not over sixteen inches, a fine red-purple, an exquisite violet of thirty inches, one with erect foliage, another with flowing, another with very narrow

and another with broader, one with dark green, another with paler green. Not one was exactly like either parent.

In the matter of foliage alone it is quite worth while sowing seeds to get types for all purposes in the garden. Unfortunately we do not always find these in the plants offered for sale. The upright sorts are more useful in the general border, where the lax-leafed tend to take too much space. This laxness, however, is much to be desired by pools and water margins, in association with erect-leafed sorts.

Among gardeners who are not specialists, but who like to know characteristic differences in the plants they use, confusion (which the catalogues do little to remedy) exists as to *I. sibirica* and *I. orientalis*.

I. sibirica has tall slender stems rising high out of narrow, grass-like foliage. From five to ten small flowers are carried on long pedicels which, with the rather lax foliage, give much delightful grace to the plant.

I. orientalis has broader foliage, stems that are near the height of the leaves, with two, sometimes three or four, flowers to the stem. These are larger than the bloom of *I. sibirica* and open from a week to ten days later — a point of importance in planning combinations. *I. sibirica* Lactea, the earliest to bloom in my garden, is fully ten days earlier than *I. orientalis* Snow Queen, the latest to flower.

Arrangement.— Because the time of bloom is that of the glorious bearded or Pogoniris, the sibiricas make charming additions to the late May and early June display. I like the taller ones used as sentinels here and there, and irregular masses of the violets and blues and whites against meadow grass. They seem particularly fitted to merge the dressed ground into the undressed. A certain flat red-purple seedling of erect foliage I use among pale pink peonies, and a fine type of the purple-

violet Sanguinea rejoices in lemon lilies growing behind it. A violet form is deeper violet because a pink columbine reaches through it, and both together thrive unbelievably with roots running well down by the corner of a cement cold-frame.

Some creamy whites make the dashing *umbellatum* lilies in front of them still more stunning. A tall pale blue at the end of a cross path, where the old hundred-leaved rose throws about its pink laden branches, is breath-taking. No garden should lack the grace of these irises in as many forms as possible. Like Sir Michael Foster, I would not be without any of them. The smallest garden should find room for Snow Queen and Perry's Blue or Butterfly.

SOME GOOD VARIETIES

I. sibirica

Lady Godiva — white, softly suffused with lavender, very early.

Lactea — milky white, of great daintiness, three feet.

Distinction — pale violet, forty-two inches.

Grandis — violet; will reach five feet in good soil.

Acuta — rigid dark-green leaves, pale lavender, twenty inches.

I. orientalis

Snow Queen — large, rounded, pure white, yellow blotch, thirty to thirty-four inches. (Inferior seedling forms are sometimes offered.)

Very free in bloom and fine. Foliage does not collapse so early in the autumn as does the better-known Sanguinea with violet-blue flowers.

Emperor — four feet, rich violet, large flowers, and comparatively erect foliage. Very rarely produces a third flower from a scape far below the terminal head. A cross between this and Snow Queen has produced plants with always four flowers, and in delightful shades of blue, as well as a white as tall as Emperor. It is interesting that in all chance seedlings or crosses of *I. orientalis* whites appear, poor in form, while the blues and violets are invariably good form, though some are more inviting in color.

Blue King — more than one form is offered in catalogues under this name. I have a very tall one, bought years ago from a firm now extinct. The foliage is rigid, dark green, and erect, the flower like Emperor, except hardly so large. The flower stems never fall to the ground as those from Emperor are inclined to do.

True Blue — a good clear blue and pleasing with

Snow Queen — thirty inches.

Where *I. orientalis* and *I. sibirica* are grown together, beautiful results come from the seed. These frequently have the broader foliage of *I. orientalis* with its larger flowers, and add the height and greater number of blossoms characteristic of the *sibiricas*. They are of great value in the garden.

Perry's Blue, a clear turquoise that is irresistible, forty inches, earlier than Snow Queen in my garden; foliage inclined to flop early in the autumn.

Butterfly, porcelain blue, clear and lovely, will reach nearly five feet. Same season as the above.

Skylark, sky blue of the same type as Butterfly. The flowers are good size and the falls carry a slender line of white on the edge.

Kingfisher Blue, is reported a very fine color and taller than Perry's Blue. I have not seen it.

Iris chrysographes, *I. wilsoni*, *I. forresti*, and *I. delavayi*, allied species, are found under "Irises for Pools and Water Edges," Chapter XII.

Pests and Diseases. — I know of no disease. The worst (and only) pest is the iris borer, which works great ravage because of the scantiness of food in the thin slender rhizomes, necessitating wide forage. My method of curb — I believe I may say control — of this pest is given in Chapter XV.



Iris orientalis Emperor in forefront at end of border; structural value of iris foliage clearly shown. Grass pathways, bordered by iris, surround vegetable plots

VII

AFTER THE TALL BEARDED IRISES AND BEFORE THE JAPANESE — MID- TO LATE JUNE

At the close of the early June bloom some interesting irises come into flower, providing an uninterrupted sequence not realized by many gardeners. Mention should be made of two members of the bearded family that bloom so late they cannot be counted in the throng and should be used as details apart from the general plan of iris color.

Richard II (Dykes, 1914) is a dwarf-growing iris, a seedling of the elusive Black Prince. The standards are white, the falls black-violet with a white edge, the flower somewhat crowded, but arresting in color. The plant has been called weak; I do not find it so.

Lady Lilford (Foster) is a cross between *I. paradoxa*, an oncocyclus variety, and *I. pallida*. The flower is dark rich velvety violet. The plant is perfectly hardy in my garden but slow in growth, and is adapted to a special position on a small terrace rather than in the general border. It is the most beautiful of these crosses that I have seen.

With these or in close sequence appear: —

I. prismatica. — An American iris described in Chapter XII.

I. foliosa. — Another very blue native iris. Give this a curb or some stones to sprawl over and afternoon shadow to save its color, and it will prove both interesting and decorative. The stem is barely a foot high and the large widespread flowers come from the axils of the leaves.

I. fulva. — A native iris, described in Chapter XII.

D. K. Williamson (Williamson, 1918): a *fulva* x *foliosa*, described in Chapter XII. This has good summer foliage, while *foliosa* becomes

shabby in late summer. *Cacique* (Berry) and *Fulvala* (Dykes) are two other crosses of these irises, which I have not grown.

I. chrysographes. — A beauty (see Chapter XII).¹

I. wilsoni and *I. forresti* (see Chapter XII). — Distinguished by their yellow color, in contrast to the blue and white of their allies, the *sibiricas*.

I. lævigata. — This, both in type and in variety *albopurpurea*, is an attractive, moisture-loving Apogon that should be tried by all who can get the true variety. It comes into flower slightly ahead of the Japanese, and the type is very blue in color.

None of these groups like lime, but all appreciate good feeding and moisture.

The Spurias. — Just why the name “spuria” is attached to these handsome irises has never been explained. The best types for garden borders are described in Chapter XII among irises for pools and watersides. They do well in rich borders that have a maximum of sun and of spring moisture; these are the conditions under which they grow in their native places in Kashmir and western Asia Minor. *Ochroleuca*, so called from its yellow-and-white bloom, and the Monspur hybrids are easily managed and carry the iris bloom along after the *sibiricas* and their allies are finished.

Botanists are entertained to observe the likeness in minute details between the flower of the *spurias* and that of the Spanish.¹ The Spanish irises (*I. xiphium*) slip into the garden scheme just at the close of the tall-bearded bloom, and the English irises (*I. xiphoides*) just ahead of the Japanese irises.

These two bulbous irises rarely find conditions to their diverse liking in one small garden. The first needs heat and drought, and some winter protection for its leaves that appear in the autumn. The second is a meadow plant and likes moisture. Travelers tell of literally wading through its blueness in the Pyrenean meadows.

¹ *Handbook of Garden Irises*, Dykes, page 103.

The Spanish irises. — These (*I. xiphium*) are perfectly hardy as to bulb, but the autumn growth should have some protection. My own experience has been chiefly that of providing winter board for field mice, which infest my garden from the surrounding uncultivated meadows. Before the quarantine, I patiently repeated provision, even into thousands. There still remain a few in a well-drained place — the hottest in the garden. The best gardeners advise that they be lifted when the foliage is yellow, dried, and replanted in September. This is an approach to the summer roasting they receive in their native habitat of southern Spain and northern Africa.

The beauty of these irises is great, embracing many shades of blue, mauve, yellow, white, and bronze, and some of them carry delightful fragrance. Because of the scanty foliage and because they disappear after ripening, the small gardens of the East and North can get most pleasure from them by grouping in not too large patches and taking them up as soon as the foliage yellows. They should be stored in sand — a hot attic is a good place — and planted again in September. This summer taking-up of hardy bulbs is a practice rather shied at by gardeners who are painstakingly careful to shelter dahlias and gladiolus from winter cold by the same practice. Slender and to the height of eighteen inches and more, with always two flowers to a stem, these irises make exquisite material for cutting. As to lists, it is perhaps not so much a matter of what we will select as what we may now obtain. These old varieties have given me great pleasure in years past: —

White: British Queen.

Yellow: Belle Chinoise, Cajanus, and Walter T. Ware.

Blue: The very deep Royal Blue, Pale Blue, Souvenir.

Bronze: Thunderbolt.

The English irises. — *I. xiphoides* cannot endure drought.

The color range is without yellow or bronze. They are larger in all their parts than the Spanish irises, also nearly two weeks later. My one garden experience with them was a beautiful planting of the white Mont Blanc, which succumbed *in toto* after an exceptionally dry summer. These are reported to be growing splendidly in the moist parts of the Pacific Northwest — good colors:

White: Mont Blanc or Mer de Glace.

Deep blue: Princess Juliana.

Rosy lavender: Queen Alexandra.

White and rose: De Lamartine.

Lavender purple: Almona, Mr. Veen.

Silvery lavender: Clara Butt, Psyche.

Bright blue: Prince of Wales.

It must be firmly impressed that early planting of these bulbs — certainly in September — is essential to success.

VIII

JAPANESE IRISES — LATE JUNE TO JULY

No single phrase so aptly describes the attraction of the irises we call Japanese as Reginald Farrer's "insolence of beauty." Often I ask exclaiming visitors, "Just why do you admire the Japanese irises?" and the reply is invariably, "Because they are so stunning." Sheer size and fine color give to the flower a touch of compelling arrogance which replaces the fragrance and the response to light and shadow and the exquisite form that endear to us other types of the iris.

The bloom comes in late June and July, when the days are long and hot. The great floppy petals of the singles are in accord with the languor of the season, and the broad flat doubles, on slim stalks in ranked file, are superb offerings carried aloft in the procession celebrating summer. They dominate the garden in their season.

Lovers of Wedgwood will find the blues and violets of this fine porcelain echoed in these irises, and there are lilac-pinks that image treasured remnants from the cupboards of our grandmothers. There are cool, clear whites and whites of softest ivory marked in gold. There are pale clarets and deep wines velvety and black-shadowed. There are sometimes delicately lined and misted flowers of great beauty and some of lively vivacity.

Through centuries of patient skill concentrated on the wild *Iris kœmpferi*, with small red-purple flowers, the Japanese have produced results that are truly amazing. They have left no records and we cannot know whether other species entered into

the remarkable types which have come to our Western gardens. The first plant flowered in Europe in 1857. Both *I. setosa* and *I. laevigata* grow wild in Japan, but seedlings from our garden plants show only *I. k mpferi* blood.

CULTIVATION AND SITUATION

Beautiful prints of elaborately coiffed Japanese women in gay kimonos, standing under wide sunshades on tiny bridges, with sweeps of iris blooming riotously in shallow water, are responsible for the widely disseminated idea that Japanese irises, to flourish, must dabble their toes in water.

The sunshades and the isolation of the iris from other plants in near association are valuable cultural hints in these exquisite prints, but the "toes in water" is a false suggestion. It is the habit of the Japanese to flood the iris plantings at the budding and blooming stage, but at other times of the year the ground is comparatively dry. Sun they must have to flower, but it is not necessary for the entire day. I have them blooming well in full sun, in only morning sun, and in sun from about eleven until three. In all these plantings isolation is given. There is no attempt at succeeding pictures. The handsome foliage throughout the season suffices. *No planting of these irises should ever be made where water stands in the winter. This is fatal.*

SOIL AND FERTILIZATION

Those who read and reread Mrs. C. W. Earle's *Potpourri from a Surrey Garden* will recall her boast of "the finest, largest flowers I have ever seen in England" from her *Iris k mpferi*. "We have in the hole Japanese primulas and Japanese iris, though they do not flower as well as in the dry bed above, which is the hottest, dryest, most sunny place in the garden; and the only attention they get, after being planted in good

✓
leaf mould, is some copious waterings when the flower buds are formed."

Soil leaning to heavy rather than sandy, full of moisture-holding material, — leaf mould, well-decayed manure, or garden compost, — is essential to success both in beauty of foliage and in bloom. If these are given, with normal seasons of rainfall watering is not necessary, though of course appreciated. I have had wonderful bloom from plants simply cultivated in a vegetable garden plot. The soil was in fine tilth, and the rains sufficient. A mulch of granulated peat moss is advised, and ✓
would, I think, be excellent, though I have not tried it.

It must be kept distinctly in mind that the Japanese iris is not a lime-loving plant — not a "calciphil," to borrow a musical descriptive word from the botanists. It does not, in robust plants, pine away if the wind carries a powder of lime to it from other operations in the garden, but none should be incorporated in the soil. Small plants are very susceptible. This spring a treasured small plant pined. I suspected the cause in the liming of soil for some legumes near by. It was lifted and placed in a pot filled with a mixture rich in leaf mould and free from lime. The response was immediate. Large and established plants in the same row showed no discomfort, though they must have been exposed to identical conditions.

PLANTING: TIME AND METHOD

Growers generally advise either very early spring or late summer and early autumn planting for *Iris kœmpferi*. If freshly propagated plants full of active rootlets can be procured early and from nearby, spring planting is satisfactory. If roots are shipped from a distance, or are from divisions of old clumps, spring planting will be attended with much loss. My own experience leads me to prefer late August and early September. (

I have planted just as the flowers were fading, in late June or early July, with no loss, but there was no bloom the succeeding year. Late August and September plantings never fail to give some bloom, however sharply divided, and none fail to grow, though shipped from considerable distances. In one's own garden, of course, liberties may be taken and plants shifted around at any time, if care in watering is used.

Place the crowns *two inches* below the surface. Examination of *Iris kœmpferi* plants will show that new roots push out from the backs of the fans of leaves. If the plant is placed with its crown at the surface, as we do for the Pogoniris, the first heavy rain will wash the soil away and the new roots will have to make flying buttresses of themselves if they get anchorage. This is too much to ask of them. The rhizome is slender, the fibrous roots are numerous, as shown in Fig. 1 on Page 5. For convenience in planting, shorten the roots to five or six inches. Do not double into a shallow trench, as even good gardeners sometimes do, but spread the roots as much as possible, firming them well into the ground. If the weather is showery, every plant will grow like a weed. If there is a prolonged drought and there is much planting to do, it is better to wait for rains, to save labor. I have a record of plants shipped a journey of two days and planted October 25, that bloomed — not at full height — the following season.

PROPAGATION

(a) **By division.** — A clump of four years' growth will furnish an astonishing number of plants. Strong hands will be needed to start the operation. I find great pleasure in dividing a favorite sort in late August — the Scotch in me delighting in the muckle of beauty to come from the mickles of roots that will be the outcome of the work. Though it is a general practice

to cut through these crowns, I never do it. It seems a needlessly cruel practice, and I doubt if time is gained. After my helper's strong hands, working first one way then the other, back and forth with a little persistent patience, have started the mass, it begins to fall apart easily enough into natural divisions. Seated on a camp stool, with a stout khaki or rubber-cloth apron over the lap, there is no operation of the garden more delightful. Of course, the gloves must be good strong ones. We do not usually shorten the foliage until the division is finished; then it is cut back to five or six inches. Replanting must be done at once, or else the plants should be protected from drying out. The strong rhizomes of the *Pogoniris* may stay out of the ground to make time for other insistent operations, but not so the *Apogons*. If rapid increase of the variety is wanted, divide into single fans; if display, into three or more; but all the old and lifeless root-material should be cut away.

Eighteen inches to two feet or more apart is not too much for planting where a massed effect is desired, with the plants to remain in position for four or five years. Accent plantings in a border may be made of three to five roots of a kind, spaced eight to ten inches apart with fans pointing outward.

An effective maintenance of established clumps is obtained by taking off from the sides large pieces and filling the holes with the richest compost. This operation is best carried out at the end of summer, when the pieces removed may be divided and reset in new places. We insert the fork, which must be a strong one, with back to the centre of the clump, prying downward and outward, then from the front of the piece to be taken off, repeating until finally headway is made. It is an operation that taxes the strength of the strongest man, and no woman, however ambitious to do her own gardening, should attempt to

divide an old clump of Japanese or of Siberian iris if there is a stronger hand and back to be called to the task.

(b) **By seeds.** — A great deal of pleasure may be had from sowing the seeds of Japanese iris. The results are often delightful, and it has been said by Mr. Dykes that those originating from home seed are more adaptable to home conditions. If the seeds are sown as soon as ripe, the germination will be very good the following spring. Choose a sunny spot out of doors in rich, unlimed soil. October is a good month in which to sow. Make drills an inch deep and four inches apart — or even less, if the plants are moved early from the seed bed. Sow thinly. Cover and press down well. I always ring such beds around with small stones which say to all, including myself, "Keep off!" After freezing, cover the bed with leaves held down by brush, both to retard the germination if, by chance, the winter has long mild thaws, and to keep the seeds from heaving too much. Uncover with the approach of settled weather. The little spears, looking like grass, will appear in this (New Jersey) climate in early May. The rows help the inexperienced eye to tell which is grass. Transplant in August to nursery rows, ten to twelve inches apart in the row. Keep watered and weeded until established. A mulch of granulated peat moss will save work both in watering and weeding, beside giving to the soil a degree of acidity much liked by this iris.

WINTER CARE

I cannot emphasize too strongly the necessity for mulching first-year plantings. Established plants protect themselves with the heavy foliage, but young plants, left naked where heavy and long-continuing snows are uncertain, will be heaved out of the ground. This means certain death for all Apogon iris.

Iris kämpferi is one iris to which a winter mulch of stable

manure may be given. I never use this, because its price in the part of the world where I live is that of emeralds, and also because I have a great abundance of oak leaves, which make wonderful winter mulches by reason of their thick texture and resistance to packing. These must be held down by branches.

PESTS AND DISEASES

The only pest that I know is the iris borer. Allowed headway, this works great havoc among the small crowns. Methods of control will be found in Chapter XV, page 100. No disease has ever attacked an *Iris k  mpferi* to my knowledge. Injury from corn borers is reported. These leave easily observed traces and should be dug out of the stalks at once. The rose chafer has great fondness for the light colors. I wish I knew a remedy for this despoiler of beauty.

SELECTION OF VARIETIES

Though the nomenclature of these irises is much mixed, — the same name given to different plants and the reverse, — very beautiful varieties may be obtained. Mention must be made here of the fine work undertaken by Dr. G. M. Reed of the Brooklyn Botanic Gardens, New York, in making a study of all commercial forms obtainable, with the object of clearing nomenclature and also of determining the best garden forms with relation to habit, time of blooming, color, and so forth, with notes on culture. The bulletin which we hope may come from this work will be a valued garden reference.

Garden selections are happiest when made from the soft and clear colors. Dancing tigers and those with the rings, streaks, and stripes of Jacob's cattle, or the mottlings of Joseph's coat, belong in curio collections, not in the garden picture.

The list given below is not long, but each variety has been

grown in my own garden, or has been under observation and approval in the gardens of friends who are discriminating.

Kamata is my favorite Japanese iris. The bloom is not large, but so blue! — the blue of fresh cornflowers on first opening, and flax-blue as it gives its color to the day. The three lower petals are lined slightly with the ivory reverse; the small standards match in blue, as do the crests of the ivory styloid petals. It grows to thirty or thirty-six inches and usually gives on each stem four flowers, which are of good substance. It should be planted near a pathway; the precious blue quality is somewhat lost in the distance.

I have made a detailed description of this variety, because before me, in one of our foremost general catalogues, it is described: "beautifully mottled white and purple; 6 petals." In the Brooklyn Botanic Gardens, where they grow Japanese irises so beautifully, Kamata coincides with my description.

Azure: a six-petaled soft mauve-blue of great beauty.

Amethyst: three large petals of lavender.

Norma: tall, fine, pale lilac-pink "self." Double.

Morning Mists: a large three-petaled white, thick crêpe-like surface, dusted across by pale blue.

Gold Bound: a fine and well-known double white.

Violet Beauty: tall, single, large-petaled true violet of crêpe-like texture with conspicuous yellow centre. Dr. Reed of the Brooklyn Botanic Gardens considers this the finest violet in the whole collection grown there.

Nightfall: not very tall, rich red-purple, shadowed in almost black velvet. Indescribably rich in color, and delightful as a foil near some of the pale pink or orchid sorts.

Pink Progress: lilac-pink, similar to Norma in color, but single.

Ondine: beautiful. White in effect, and perhaps more easily obtained than Morning Mists, which it resembles.

Quakeress: an old variety in deep pink-mauve with sky-blue halo. This is highly thought of by Mrs. Cleveland.

Kuro-Kumo: a deep purple, overlaid with blue, and valuable for its late bloom. Double.

First Frost: earliest to bloom. Single white.

Identification. — Often in amateur flower shows the classification committees make the error of admitting small-flowered *Iris kœmpferi* as Siberian iris. The size of flower is not the determining distinction, but the midrib of the foliage, which is heavy in all Japanese irises, and not pronounced in the Siberian irises.

IX

REGELIA AND ONCOCYCLUS IRISES, WITH A FEW "MIFFY" SORTS

AMONG amateur gardeners there are ever some with the pioneer and adventurous spirit, who like to do a thing because it is difficult to do, and to this spirit of nonacquiescence in the usual we often owe the acquisition of valuable garden material. Did not Dean Hole, because he persevered in doing it, make popular the outdoor growing of tea roses? And who doubts this helped to bring the Hybrid Teas?

In Asia Minor, Palestine, and Syria there grow two groups of iris belonging to the Pogoniris, but differing in form of flower and of roots from each other and from the common bearded irises (see 4 in Fig. 1 for stolon-like growth). The Regelia irises (named for the botanist, Dr. Regel, who introduced many fine plants from Central Asia into cultivation) bear two and sometimes three flowers to the stem, while the Oncocyclus (the why of the name is shrouded in mystery) bear one flower to the stem, which in some varieties is of the greatest beauty. These in their native country grow among limestones, in heavy red soil that bakes in the long, dry summers, and the difficulty of the Northern and Eastern gardener is to supply this summer dryness. The great Southwest and parts of the South could, no doubt, with little effort, succeed with these as is done in California. There are gardens in the East that are growing types of the Regelia irises and securing bloom from them under the same treatment accorded other Pogoniris of the garden. The beautiful *korolkowi* seedlings seen at a Plain-field Garden Club show have already been mentioned, as has

I. hoogiana, growing in my own garden, and Mr. B. Y. Morrison of Washington grows *I. korolkowi*, which seeds for him. Those at Plainfield were grown by Mrs. H. C. Wells, an iridist who had the plants from Mr. Morrison's garden.

In Michigan, by planting on the south or east of a building, the Regelias and their crosses, as well as some Oncocyclus crosses, are being successfully grown.

The Oncocyclus division is best known by *I. susiana*, which forces readily and which recently made something of a sensation as the "King Tut" iris in New York, along with weird sweaters, hose, and so on. As the dark note in the flower decoration of a winning breakfast table, in cherry, black, and ivory, at the great New York Flower Show last spring it won again much popular notice.

There are exquisite forms in both classes, in crosses between the two, and in crosses between the Pogonirises, some of which have been mentioned in other parts of this book. For those who wish to try, specialized information as to varieties and treatment is found in the *Handbook of Garden Irises* (see Bibliography, page 113).

SOME OTHER "MIFFY" IRISES

There appears in careful catalogue lists, as a cultural hint, a slight indication of the parentage of difficult varieties offered. Of comparatively recent origin are many handsome irises that carry an infusion of blood from species that suffer in cold, wet climates. These embrace *trojana*, *cypriana*, *mesopotamica*, and *ricardi*. The firm of Vilmorin first recognized the value of *Trojana* as a parent and gave us *Alcazar*, which is easy in any garden, and *Iso-line*, which is "miffy." From *I. cypriana* Sir Michael Foster gave us *Caterina*, *Lady Foster*, and *Kashmir White*, all difficult without special provision. Later from M.



Iris susiana

Figure 8



Iris korolkowi

Note aristocratic bearing of *iris korolkowi*—a distinction held by the *Regelia* type of iris, and note also the dark velvety diffuse beard of *Iris susiana*—a characteristic mark of the *Oncocyclus* group

Denis we have Mlle. Schwartz, J. B. Dumas, and Mme. Durrand, with the blood of *ricardi*.

To grow these satisfactorily in a flat garden, a raised bed is necessary, plentifully supplied with coarse gravel, well enriched with bone, and sweetened by lime. I have found, also, that a free admixture of sulphur helps to promote health. Crusader — a notably blue iris of this type — and Kashmir White have shown no trace of rot with this treatment. Both refused to be happy with the ordinary provisions for the bearded irises. A lift of three or four inches is sufficient. These also thrive splendidly with their feet resting in a low dry terrace. Mrs. H. G. Lloyd of Haverford, Pa., grows such varieties superbly in the warmest terraces of her iris garden.

Miss Sturtevant's Avalon, which does well in California, comes into this class for Eastern gardens, as do some of the late Mr. Mohr's introductions that have not yet been sufficiently tried in the East.

IRIS DICHOTOMA AND SOME FOR SOUTHERN GARDENS

Iris dichotoma (Pallas, 1773) blooms from August to early September. From time to time in these more than one hundred and fifty years, this iris, called *dichotoma* because of its branching flower stem, has been introduced into cultivation. Eastern Siberia, Mongolia, and Northern China are its native homes. It has been a revelation to me in the lower and richer part of my garden, where there is sun until three in the afternoon. My first plant came to me through the kindness of Mr. C. H. Connors of the New Brunswick Experiment Station, and Mrs. Charles H. Stout supplemented this generously with seedlings.

There is an interesting and decorative flat fan of summer foliage, closely clasping the widely branching flower stem which begins to show in the plumped fan centre early in July. The stem rapidly shoots up — to a height of five feet on one watched plant — and sometimes carries, by actual count, seventy-five blossoms. This particular plant was heavily fertilized by tank-age and bone meal, with lime dug around in the early spring, and every flower developed. The year before, without this spring fertilization, some of the last buds failed to develop. The individual flower suggests that of *I. gracilipes*, though a trifle larger and duller in color. Many blooms open at once, and the effect is that of a floating lavender mist. It may be associated in distinguished combination with *Lilium speciosum* and *Statice latifolia*. Through the entire month of August it was the centre of attention, opening at the vesper hour and closing with that of the curfew. The seeds germinate readily and the seedlings

are easily managed, sown either in autumn or spring. Plants from March-sown seeds bloom in September, but, of course, not with great strength. The foliage dies completely away, and care needs to be exercised not to pull it out for a spent plant. One experimental plant has appeared three successive springs, though Mr. Dykes has said that it exhausts itself and dies after blooming. Seedlings vary in color, and some are reported greenish white. None have bloomed for me except in pleasing lavender.

A QUEST FOR SOUTHERN GARDENERS

Iris stylosa (Poiret, 1785). — I have had much pleasure from this winter-flowering iris of Algiers, which I can give only the protection of an open and deep cold-frame, where a patch of it is planted directly at the base of the three-foot north wall. Inside the deep cold-frame a small frame is constructed directly over the plants, and the sash is placed over this in late December. When the autumn is hot and dry, bloom may appear in October; if cool and damp, not until December or later. From late January the bloom is continuous far into March, and for an iris lover in the North I know nothing more delightful than to be able to bring in from week to week tightly rolled buds just showing color, with snow sometimes two feet deep all over the garden. I give my experience in the hope that it may induce more gardeners in the Southern states to make the acquaintance of this really easily managed winter bloomer. Mr. Morrison reports bloom out of doors in Washington, though only in mild long autumns and in one mild February. It is grown with great success in California, and Mrs. Dean reports it blooming in a cold that abashes the violet. The blossom is a beautiful fragrant lavender, and lasts, in water in a cool room, three days.

Not too much feeding, plenty of lime rubble, and a warm, well-drained place are the requisites of culture. Either March or April, but preferably perhaps September, is a good time for dividing and planting, with careful watering until established. For gardens south of Washington it might well prove a winter delight out of doors, and for those who can give it slight protection it should become as valued a winter bloomer in parts of America as it is in England.

It must be noted that the flower is on a long perianth tube, — as much as six inches sometimes, — which should be *pulled*, not cut. “Pluck *Iris stylosa* and pure white Christmas roses; deck your dinner table richly; and people of soul will give no thought to the baked meats.”

Iris japonica or *fimbriata*. — Not for Northern gardens is this note made, but for April bloom in Southern gardens. Hear Eden Phillpotts: “The flower is fragrant, and I think excites more enthusiasm than any iris I show to friends. To see *fimbriata* in full loveliness one must go abroad. On the Italian Riviera it is a grand feature of the gardens, and I remember a bank in full flower where a thousand spikes and perhaps four thousand blossoms scented the sunshine of a March forenoon in Genoa. It is a precious sight in a formal garden, sprawling along some marble-edged bed.”

Plants of this are not too hard to obtain, and should be tried out of doors by those whose gardens have little frost. The blossom is lavender, fringed and fleeting, but there are ten or fifteen to a stem. From Central China and Japan it comes, and has been known to Western gardens more than a hundred years. It is easily grown in pots, and is not fastidious as to soil, provided there is moisture with good drainage. Out of doors it should be given the shelter of shrubs.

Iris Wattii. — From southwestern China is this extraordinary

iris of recent discovery. The flower looks somewhat like that of *fimbriata*, but is produced from a stem made the year before and blooms in April. For Southern gardens it should prove an interesting experiment, and it may also be grown in pots by the enthusiast. Light, rich soil.

Dutch irises. — Of the Dutch irises, so called because they originated from experiments in Holland, I have only failure to report in my garden. They should make valuable material in more southern gardens, because they come into bloom at least two weeks before the Spanish irises open. Good colors are: —

Pale yellow: Van der Helst.

Purple blue: Rembrandt.

Clear blue: Hart Nibbrig.

Light blue and pearl: Pieter de Hoogh.

IRISES FOR DIFFERING SOILS, POSITIONS, AND CLIMATES¹

For the average garden. — *Pogoniris* in variety; *sibiricas* in variety especially Butterfly and Perry's Blue, with *orientalis* Emperor and Snow Queen.

For rich soil. — Add to the foregoing the Japanese and the *spurias*.

Lime-lovers. — All *pogoniris*.

Lime-haters. — Japanese, *lævigata*, *verna*, and other apogons to a less degree.

For moist meadows. — All beardless varieties.

For actual water margins. — *Pseudacorus*, *versicolor*.

For marshes that are dry in summer. — *Pseudacorus*, *versicolor*, *ochroleuca*, and in the South *fulva* and *hexagona*.

For shade. — *Fatidissima*, the scarlet-seeded native of the British Isles; grows there in copses; flower insignificant, foliage evergreen, seeds persistent. Fails in northern New Jersey. Should succeed in the South.

For semishade. — If under high pruned oaks, with sharply drained site and two or more hours' direct sun at hot part of day, all irises for the average garden, if free and vigorous, will bloom well; *cristata*, *verna*, *gracilipes*, and possibly *tectorum*.

For the rock garden. — *Cristata*, *verna*, *gracilipes*, *pumila*, *reticulata*, *graminea*, *tectorum* with its variety *alba*, *arenaria*; Californian species, some of the bulbous Junos, like *persica* and *bucharica*; *chryso-graphes*, *bulleyana*, *forrestii*, and the native *prismatica*.

For naturalizing. — In meadows, *versicolor*, *pseudacorus*, *sibirica*; on dry sunny lime-charged slopes, vigorous bearded sorts.

Drought-resistant. — *Pogoniris*, especially the minor sections *regelia* and *oncocyclus* and the grassy-leaved *ensata*.

For the South. — *Japonica*, *watti*, Dutch, Spanish, *stylosa*, and where there is clay the Pogons, especially those with the blood of *cypriana*, *mesopotamica*, and *ricardi*; *regelia* and *oncocyclus*; early Junos.¹

¹ Adapted from Bulletin No. 10, "Irises for Amateurs," American Iris Society.

XI

GARDEN ARRANGEMENT

ARRANGEMENT of plants is a matter of personal taste, and color relations are ever controversy-provoking. The possibilities of varied expression with irises, even in small gardens, are many, hints of which have appeared throughout this book.

Mr. Sturtevant has shown, in the adjoining plan arranged to be seen from window and doorway, how a small central grass-plot with flower borders at the edge may carry as many as twenty varieties of iris blooming simultaneously, and still preserve unity of intention. Enough of a few harmonizing and contrasting colors are used in formal masses to give poise at the centre of the picture. From this, detached groups, in monotony-relieving variation of height and size as well as manner of growth, find places up and down a border of perennials, designed to give interest throughout the season. The black-violet of Mme. Gaudichau, relieved by the pale yellow of Flutter-by, drifts through purple and rose tones to black red-bronze with notes of yellow and cream-white on one side; on the other, through blue-violet, blue, white, and pale lavender, with notes of black red-violet and gold.

Small shrubs give shadows, variation in line, and enduring green. Among these, spaces are left for light and shadow to play through the translucence of the iris flower, which loses much of its beauty if imprisoned by hedge or wall.

With the use of tulips, the intermediate irises blooming at the same time are omitted, but a place has been made for the pumilas, and of these my choice would be the early purple *Atroviolacea* and pale blue *Cœrulea*.

Caution should be observed by the owner of the small garden in the use of blends and large, dark-hued sorts. They are best as accents, and, beautiful as they often are, should not be allowed to monopolize the space for irises. *Ambassadeur* is well nigh a perfect iris, but one would not wish its red-bronze and black velvety carmine to be the only iris color in the garden. The clear selfs in the chosen colors, either light or dark, may be used lavishly, but they are more effective if relieved occasionally by contrasts or by deeper accents.

In the mechanical placement, it is well to remember that plantings longer than wide give the best effect. In the small garden even single lines are effective. In larger spaces these would be too thin. In any garden, large or small, where iris is made to dominate at its season, great pleasure pictorially is had from choosing one favorite clear color and using that in quantity, accenting and relieving it with contrasts and harmonies and also varying heights. It will be found that the most tempting of the iris schemes, that of mauves and lavenders and violets, will be more satisfactory if it is relieved by pale yellows, or soft pinks, or whites. Any arrangement that stretches away from the eye is more telling than one looked at from across, and low plants to the front reveal the fine vertical lines of the iris foliage that are so valuable with the general roundness and diffuseness of most other plants in the border.

In choice small green gardens, a single sentinel group of iris sometimes gives the needed touch. There is a restraint about the whole iris plant that belongs to these places of peace. *Pallida dalmatica* (midseason), the long-loved and ever-wanted cool lavender-blue, or *Delicatissima* (late), palest lilac-pink, tall and fragrant, would be good choices. Both of these have the fine foliage characteristic of the *pallida* irises. Or *Shekinah*, pale yellow with warm inner radiance, would be fitting both

in name and plant for such a garden. Again, the taller and more slender foliage of *sibirica* Perry's Blue, or the less-statured Snow Queen, could be chosen.

For a pale blue and white group, late flowering, *Corrida* rising above *La Neige*, a flower of sculptured ivory, should please the most captious. The blue Japanese *Kamata* with a white, or with *Norma* in pale pink, would rival its setting and give color for early July.

For outlining terraces, where stress is wished on the straight line, varieties that have a tendency to bloom in a single plane of color give pleasure. *Dalmarius* (midseason), a gray lavender, is used admirably in this way with *Nepeta mussini* for a distance effect. *Monsignor* (late), a very rich purple, is splendid for such a purpose, and is fine if in afternoon shadow. Along a curb where the line needs relieving breaks, the scrambling and very blue-flowered native *I. foliosa* would show its beauty, which is lost in the usual border. This too is fine with afternoon shadow.

One small garden which I know screens a sunny glade by the tiniest bit of woodland — the dogwood its largest tree. Shadow-loving *I. gracilipes*, *vena*, and *cristata* companion a pathway through this to the iris-filled glade which in May is more of heaven than earth. The element of surprise in this garden adds much to its charm.

COMBINING PERENNIALS AND SHRUBS

Columbine is the one perennial that may be allowed to run riot among the irises. It seeds itself all over my garden and rarely works havoc in combination with the iris colors. Even the smallest garden may give it welcome.

Sweet rocket I use in quantities, but I pull most of it out the moment it has finished, or it would take possession of the

place. For all its sweetness and fitness with the iris, the small garden will find it too weedy.

Oriental poppies in the paler shades are exquisite with the lavender and violet irises. The scarlet ones are dangerous in a small garden. In an out-of-the-way place in afternoon shadow I get great pleasure from a scarlet poppy opening near I. Othello and I. Madame Chereau.

I give here a note just as I wrote it in my garden book in early June of last year: "Clouds of sweet rocket, streaming columbines, blue flax, coral bells, pale pink poppies, lacy white valerian, old-fashioned roses, southernwood, *fraxinella*, both white and rose clove pinks, Johnny jump-ups, *Nepeta mussini*, lemon lilies, *Polemonium*, *Stachys lanata*, lyme grass, prostrate blue veronica, pale yellow and white *Helianthemum* — a rioting tangle, with iris, erect and poised, giving line and intention."

Baptisia tinctoria, *Salvia prætensis*, *Thalictrum*, — all the thalictrums for their lovely foliage, — lupine, anchusa, this last with white and pale pink irises should be added to the list. With the exception of sweet rocket and Oriental poppies, all these have garden value throughout the season.

With the early irises the border plants, *Stachys*, clove pinks, *Heuchera* (coral bells), *Veronica rupestris*, and *Nepeta mussini* are of great value among *Phlox divaricata* and *Phlox subulata* in white and pale pink; and this same foliage-value continues until hidden by snow. *Arabis*, both single and double, and *Iberis sempervivum* are also permanent, the latter invariably, the first unless scalded by summer heat after showers.

It is well to remember that shrubs are needed for relief in iris plantings more than for backgrounds, and especially is this true with the Pogoniris, whose beauty is so dependent on the play of light and shadow. Lilacs and wisterias, hawthorns, *Philadelphus*, laburnum, flowering crabs, pale pink weigela, *Rhodo-*



A June tangle at path intersection — tall pale blue Siberian iris, old pink rose (R. centifolia), fraxinella, sweet rocket, pale rose columbine, and white valerian

typos kerrioides, deutzias, tall bush roses like Madame Plantier, *Rosa hugonis*, and climbing roses on pillars, with box and gooseberry, with currant bushes and La France raspberries, are some of the beautiful and useful things that may be used to throw shadows, make varied outlines, and screen varieties that shout at each other.

GOOD COMBINATIONS

I. sibirica Perry's Blue, with *I. La Neige*, just out from the shadow of an apple tree under which the starry spikes of white *Camassia* crowd; and farther beyond, in the sunlight, pink seedling iris.

Pale pink poppy, tall pink columbine, and dark blue Siberian iris, with lyme grass in front.

Pale gold *I. Aurea*, warm white *I. Innocenza*, black violet *I. Othello*, and salmon *Papaver rupifragum*.

Blue and white *I. orientalis* with *Lilium umbellatum*, against meadow grass.

I. Thorbecke, white and black violet, with pink Oriental poppies.

I. Alcazar with lavender sweet rocket, *I. flavescens*, and *Hemerocallis* Gold Dust.

I. Dawn, pale cream, with *I. Archevêque*, rich purple, in front of *Hemerocallis flava*.

I. pallida dalmatica with white valerian and pink columbine.

Black purple *I. kochi* with troops of Iceland poppies.

I. Shekinah with yellow columbine, creamy valerian, and fall-sown cornflower.

I. Princess Beatrice and *Aquilegia cærulea*.

I. longipetala and *I. missouriensis* with rose-hued tulip John Ruskin or pale yellow *T. Ellen Willmott*.

I. Sweet lavender with *I. Cordelia* and *I. orientalis* Snow Queen.

I. Blue Jay with pale blue *I. Corrida* and *I. La Neige*.

I. Juniata, tall violet, just out from the golden chains of laburnum.

I. Prosper Laugier, bronze and ruby, with yellow and pink columbine and pale yellow *I. Shekinah*.

I. florentina at the edge of Bechtel's flowering crab, with tulip Pride of Haarlem. (Mrs. Wilder gives this delightful picture.)

Purple *I. germanica* with tulip Mrs. Moon and *Spiræa vanhouttei*.

I. aphylla, dwarf red-purple, near *Daphne cneorum*.

I. Rhein Nixe, purple and white above pink *Saponaria ocymoides*.

I. verna in dappled shadow with *Viola pedata*, *Houstonia*, and maidenhair fern.

Dwarf yellow iris interplanted with columbine in front of narcissus Evangeline, Orangeman, and Czarina — a long period of bloom with charming foliage effect.

I. pallida dalmatica, pink oriental poppies, and *Rosa hugonis*.

I. Quaker Lady with dark red pyrethrum.

A group of claret and red-purple I. Midwest, I. Archevêque, I. Harriet Presby, and I. Caprice, with *I. flavescens* in pale yellow near the thin foliage of golden currant (*Ribes aureum*).

I. Phyllis Bliss, a fresh, fascinating shade of pink lavender unknown to me in any other iris, with creamy columbine and blue-purple *Geranium grandiflorum*.

Deep purple I. Parc de Neuilly, Mme. Chereau, salmon-pink oriental poppies, and coral bells (*Heuchera sanguinea*).

Pale flesh I. Cherubim, tulip La Noire, and young foliage of southernwood.

Pale yellow lupines with I. Queen of May, pale rose, or with violet I. Princess Royal.

I. Lohengrin — or better, Prince Lohengrin — with the young foliage of *Artemisia abrotana* (southernwood).

For a barbaric splash, I. Tom Tit, dwarf, deep violet-purple, and orange *Cheiranthus allioni*.

Pink-bronze I. Arnols with warm white I. Innocenza or Athene, and rosy I. Her Majesty.

Foliage of *I. orientalis* Emperor or other erect forms of *I. sibirica* with *Hosta cœrulea* or peonies or *Clematis davidiana*.

Cream-white I. Ivory, orchid Mrs. Alan Gray, and *Phlox divaricata*.

IRISES USED IN PLAN OF GARDEN

(page 77)

1. Souvenir de Mme. Gaudichau (Millet, 1914), 38 inches. A black-violet velvety flower of large size. The plant is outstanding. Comparatively early.

2. Archevêque (Vilmorin, 1911), 24 inches. Standards red-violet, falls very deep and velvety. Early and pronouncedly fragrant.

3. Her Majesty (Perry, 1903), 24 inches. Rose-pink falls lined crimson. Masses well and is patient under abuse. Late.

4. Pocahontas (Farr, 1915), 24 inches. White frilled red-purple. Vigorous.

5. Queen Caterina (Sturtevant, 1917), 36 inches. A large pale lavender-violet, iridescent, with fine form and substance.

6. Aphrodite (Dykes, 1922), 42 inches. A bright violet-pink self of good substance and finished form. Growth vigorous, and liked by all.

7. Anne Leslie (Sturtevant, 1917), 30 inches. White standards, faintly flushed rose; falls carmine. An extremely vigorous plant.

8. *Sibirica*, white. This may either be *Lactea*, 3 ft., or Snow Queen, 30 inches; the second would accord with near-by Ambassador in time of bloom.

9. Shekinah (Sturtevant, 1918), 34 to 36 inches. Soft pale yellow, deepening toward centre. Good foliage and exceptionally lovely.

10. Joya (Morrison, 1921), 30 inches. Deep blue self of good growth.

11. Drake (Bliss, 1919), 36 inches. Pale blue satin-textured flower of free blooming habit.

12. E. L. Crandall (Farr, 1915), 24 inches. White of fine substance, standards bordered blue, falls blue at base.

13. Perry's Blue (Perry, 1912), 36 to 40 inches. Beautiful clear blue *sibirica*.

14. Alcazar (Vilmorin, 1910), 42 inches. Standards lavender, falls black red-violet. A plant of great poise and beauty.

15. Oriflamme (Vilmorin, 1904), 30 inches. A large loose flower of lavender-blue and violet.

16. Princess Beatrice, 40 inches. A selected form of *pallida dalmatica*. Satiny-textured cool blue-lavender flowers, broad with flaring falls.

17. Gold Imperial (Sturtevant, 1924), 33 inches. Rich chrome yellow with orange beard.

18. Iris King (Goos & Kooneman, 1907), 24 inches. Gold standards, calliopsis crimson falls, edged gold.

19. Ambassador (Vilmorin, 1920), 40 inches. Pale red-bronze and black red-velvet. Outstanding in poise and quality. Late.

20. Flutter-by (Sturtevant, 1924), 30 inches. Clear pale yellow with lighter falls that give a floating effect in the garden.

XII

IRISES FOR POOLS AND WATER EDGES

"I HAVE often found that among lovers of flowers of the less careful order there is a general idea that all irises like water, and that irises, with them, mean flag-leaved irises. These are for the most part mountain plants, while *Iris florentina* grows on wall tops; and though they may do fairly well on a well-drained river bank, they are not the true irises for water edges."¹

The above indictment by Gertrude Jekyll (*Wall and Water Gardens*) applies with force to gardens in America. Within the recent past I have seen a pathetic group of *I. pallida dalmatica* struggling to keep life with its roots in the seep of a small rill. It was placed there by one of the country's prominent gardeners, and dismissed with the remark, "Of course it will grow that near the water — it's an iris." It was not growing, but dying by inches.

Before me are copies of two of our leading gardening publications. In each an artificial pool with decorative planting is featured. Groups of the Pogoniris, the flag-leaved mountain plant of Miss Jekyll's reference, form the motif of the planting. Nature can and does quickly resent and correct this offense against the spirit of planting where the water edges are natural, as instanced by the group of *I. pallida dalmatica* mentioned above. In artificial water-edges the cultural conditions — bone dry by the usual cement curb — encourage vigorous growth in the Pogon tribe, but the connotation is amiss. The wrong plant

¹ This observation is not intended for high-built rock gardens about pools or along rills, where the smaller wild species of the bearded iris on the higher parts would be in keeping.

for association with water has been chosen. Whether these plants have their feet actually in seepy edges or not, the supposition that they have is suggested. The obvious selection of irises for any water margin is made from the types which Nature herself places in such positions and, in harmony, furnishes with slender, rush-like, oftentimes flowing foliage. Such types are found only among the Apogons or beardless division, and cultural conditions may be made welcome to these moisture-loving irises by the side of the driest cement verge.

Dig out one foot deep. Fill in with the finest leaf mould you can make or buy, mixed in equal quantities with well-rotted sods from an old field where lime has not been used for some years. One quart of bone meal — two will not be too much — to one bushel of this mixture will make living quarters in which the Japanese and Siberian irises will revel. In such Ritz-Carlton living quarters, I have grown *I. wilsoni* to fully three feet. In ordinary garden soil it reaches eighteen to twenty inches.

A list from which to select irises for the waterside: —

Our native *I. versicolor*, varied shades of blue purple.

The European native *I. pseudacorus*, yellow. These two are the only aquatic irises, and will grow with their feet actually in the water. They are exceedingly handsome on bold watersides and, blooming at the same time, are good in association. *I. versicolor* does not grow so tall as the yellow, and the leaves arch attractively in contrast with the upright spears of *I. pseudacorus*. They are too vigorous for small pools, and on large watersides precaution must be taken to remove the seed pods as soon as formed, or lusty seedlings will spring up in amazing numbers, peopling the earth; and one can easily get too much of them, handsome as they are.

I. sibirica in variety (see page 53).

I. orientalis and crosses (see page 53).

I. kœmpferi in variety. A list will be found under Japanese irises, page 66 and following.

I. chrysographes: not easy to obtain, but beautiful in its rich purple flower written in gold. Eighteen to twenty inches, blooming just after the sibiricas and before the Japanese.

I. wilsoni: slender in foliage, stem, and yellow flower; eighteen to thirty-six inches. Blooms with *chrysographes*. Free.

I. fulva: pleasing foliage, far into autumn, even into winter, spreading terra-cotta bloom. Season same as *I. wilsoni*. Good together.

I. ochroleuca: splendid ivory and gold, four feet, bold foliage, slow to establish, and blooms better after a good summer baking, though it demands moisture in early spring and summer. Rather too bold for very small pools. Thrives at seaside.

I. aurea (Apogon, not the Pogon variety): rich yellow, upright bold foliage, imposing, but not free in bloom. Likes same cultural conditions, as *I. ochroleuca*.

I. Monnierii: another brilliant yellow, fine foliage, but not free in blossom for me.

I. Monspur: these crosses of *I. monnieri* and the species *spuria* with which Sir Michael Foster enriched our gardens are much freer in bloom than the parents and very lovely in the variety Mrs. A. W. Tait, pale blue, and A. J. Balfour, rich violet with yellow throat. These two varieties are the only ones I have grown. Both are desirable in every way.

These last three irises, with the monspur hybrids, require at least two years to establish themselves for bloom, but the fine, strong, warm green foliage is always beautiful and the vertical lines are pleasing.

I. forrestii: Mr. Dykes considers this handsomer than *I. wilsoni*, a close relative. My efforts to secure it have always been rewarded by plants of *I. wilsoni*. Hope is centred on some promising seedlings. It is a clear yellow, less veined than *I. wilsoni*.

I. delavayi: the greatest value of this close ally of *I. sibirica* is the habit of flowering later, even into July. It is more dependent on moisture, and for this reason does not adapt itself so readily to the usual border conditions. In swampy ground in western China it grows to four or five feet. If slightly boggy conditions can be given, the fine broad foliage topped by the blue and the red-purple flowers, larger than those of *I. sibirica*, makes an effective plant.

I. prismatica: I am very fond of this engaging small native of our Eastern coast. It grows only to eighteen or twenty inches, is somewhat straggling in habit, with a stem that is never wholly straight and small tufts of grassy foliage. The pale lavender flowers with long fluttering

falls appear just at the close of the bearded iris season. Because of its gypsy habit of wandering it is more adapted to "wild" conditions of naturalization in tiny meadows. I have had much pleasure from this in a rich spot where the shoots were not allowed to straggle beyond the prescribed eighteen-inch diameter. The response to gentle discipline and good food has been five larger flowers instead of three to the taller stem, and a plant of more compactness.

D. K. Williamson: for a somewhat scrambling and startlingly handsome effect, this iris of American origin is well adapted for use about the curbs of pools. Mr. E. B. Williamson used two of our natives, copper *I. fulva* and blue *I. foliosa*, in a cross, which resulted in a plant with the freedom of bloom in *I. foliosa* and the good foliage of *I. fulva*. It remains a good green far into autumn. The bloom is widespread, large and brilliant red-purple, rich and velvety on opening, but losing the velvety effect in sun.

XIII

HOW TO CARRY IRISES TO FLOWER SHOWS IRISES IN HOUSE DECORATION

How to get fragile iris bloom safely to the show room is ever a puzzling question. Miss Sturtevant, who for years has taken iris bloom to the exhibits of the Massachusetts Horticultural Society, evolved a highly successful method which is shown in the outline figure.

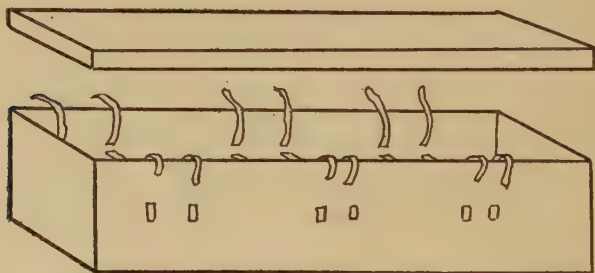


Figure 9. Heavy corrugated box laced with tape for carrying irises to flower shows

Strong corrugated boxes such as are used by the rose grower for specimen stalks, 8 x 10 x 48, make the best carriers. A box carefully laced with firm $\frac{3}{4}$ inch tape, spaced six or eight inches, will last through many seasons. If the lacing tape is carried over the top edge of the box, the cradle is less likely to sag under the weight. Packing will be facilitated if a box of three-inch bits of tape and another of small sharp pins is at hand. Pin the stalks firmly to their cradle. As many as thirty-six stalks may be put in if not too large. These boxes will carry

safely long distances in motor or train if personally conducted. Mail or express is too rough.

Flowers may be cut the afternoon before and stood upright in shallow water in pails. Sphagnum moss helps to keep stalks in proper position. This, with ice, is also an aid in staging well. Afternoon cutting lessens the morning's hurry, but early morning cutting and packing, without previous standing in water, is feasible with iris bloom if only a few hours elapse before staging. Breaking, not wilting, is the worry with cut iris bloom. Stalks in bud will carry long distances, and the first flowers opening will be of fairly normal size and color.

Great care is needed in unpacking. More broken flowers result from hurried and nervous unpacking than from carriage.

IRISES IN HOUSE DECORATION: CUT FLOWERS

In the whole realm of bloom I can think of none that excel and few that equal the decorative distinction of the iris as a cut flower. A quality not always realized is that iris may be cut in bud and opened beautifully in water. The English have long appreciated this in the winter-flowering *I. stylosa*, as have florists in the Spanish and Dutch irises. The same quality exists in the more frail irises of our gardens; and often the later buds opening on the cut Japanese and bearded irises are of delightful coloring and lovable size, so that an entirely new arrangement in effect is had from the shortened stems, cleared of wilted bloom. Stalks in bud make most acceptable offerings to city friends, as they carry perfectly. Unfortunately many of the superb modern bearded irises are adapted — because of size of flower and thickness of stem — only to large arrangements.

Growers are beginning to recognize this, and after the first enthusiasm of collecting all the "grand 'uns," to quote the late Rev. Joseph Jacob, discerning lists are beginning to stress some

of the small and delightful slender-stemmed sorts. I find in only one catalogue the old and very late, small, slender-stemmed rose-and-fawn Lord Gray — an unfortunate name for a fine little cutting iris. The early low-growing and slender violet *pallida* Brionense is too seldom offered. For those who buy bearded iris with a thought for cutting as well as low massing, those having a *cengialti* parentage will be worth investigation. All of the Apogon irises, without exception, are extremely beautiful as cut-flower decoration. Arrangements of these, as well as of the Pogoniris, are best kept simple, even frugal, that no detail of the exquisite outlines of the flower may be lost.

Some arrangements: —

White irises in blue bowls give a delightful cool effect.

Pale pink irises in crystal or opalescent glass.

Purple irises in pale green bowls.

Claret and red-purple irises in ivory bowls on black pedestals.

Bronze irises in brown pottery and in copper.

Blue Japanese Iris Kamata, with *Gypsophila paniculata* and white *Agrostemma* in ivory on black pedestal, or in blue.

Copper *Iris fulva* with yellow *I. wilsoni* in mahogany-colored bowl.

Iris Snow Queen with *Nepeta mussini* in gray-blue or violet.

I. cristata with own foliage in low crystal or silver or in violet.

I. gracilipes in orchid glass on black pedestal.

Yellow *I. pseudacorus* in brown bamboo baskets.

Bronze *I. Prosper Laugier* in Carolina pottery of burnt yellow on black pedestal.

I. Isoline, pink and rose “veiled in brown tulle,” with foliage of *Rosa rubrifolia* in dull rose pottery touched in brown.

Blue *I. foliosa* in pale yellow on ebony pedestal.

Orchid Japanese irises in spreading bowl of iridescent lavender on a black tabouret.

I. tectorum alba with own foliage in low blue bowl.

Purple and white *I. Rhein Nixe* with lavender and white sweet rocket and purple *Salvia pratensis* in white pottery.

I. lævigata albopurpurea (blue and white), in Japanese arrangement with own foliage.

FORCING BEARDED IRIS FOR HOUSE DECORATION

The ordinary sunny window is all that is needed to bring clumps of the early and low-statured bearded irises into bloom. They need no period of dark, no paper cones, and are decorative throughout the whole period of forcing and bloom. I have been most successful with *Statellæ*, the early creamy fragrant variety that has good foliage, slender stems, and a long-blooming habit. Clumps brought to the window in early January will bloom by mid-February. Best results are had from plants three years from division.

I use flats — to avoid the breakage of pots from freezing — 9 x 12 and about six inches deep. An inch layer of cinders with sphagnum moss over them is placed in the bottom. The mats of rhizomes are taken up before heavy freezing sets in, and are crowded into the flats, with rich compost pushed into the interstices. These may be stored in any light shed where they may freeze and be brought in at intervals as needed. Careful attention to watering is needed, especially while in bloom. A flat in full bloom will flag very quickly from inattention. When coming into bud, irises may be broken up and put in other receptacles, if careful watering is given. As the buds begin to break, the flat should be moved out of direct sunshine, which is too strong through glass for the delicate texture of the flower. I have had a flat of *Statellæ* remain in blossom over a period of three weeks in a north window, and no lovelier February decoration could possibly be conceived than a series of these flats in a wide window. The rhizomes are in no way hurt by forcing, and the same flat has given three successive winters of bloom — excellent bloom — with only a surface feeding of bone meal and fine compost after a roasting summer rest. That really is too much to ask of any patient plant! The *pumilas*

force perfectly, but so great is the team work, the period of bloom is little more than a week.

The forced rhizomes may be ripened off in any light dry place and planted out again with the coming of spring.

With a little forethought, any rather unpromising sunny, even stony, spot may be made into a small nursery for bringing mats of roots to proper age for forcing. I have not tried them, but free-blooming, low-growing variegates like Gagus should do admirably. Tall stems are too leggy and unmanageable in the window.

XIV

HYBRIDIZATION AND SEEDLING RAISING

THERE is no phase of gardening upon which the older gardener would speak with more earnestness — entreaty, indeed — than that of the delight and interest to be had from growing seedlings, hybrids if possible, of the more permanent perennials that take several years to come to perfection. John Parkinson's exulting meditation before his daffodil, "None ever had this kind before myself, nor did I myself see it before the year 1618, for it is of my own raising and flowering first in my own garden," may be appropriated by every owner of a garden, however small.

The Pogoniris offers, because of mixed ancestry, a fascinating and not difficult field. The diagram (Fig. 2)¹ shows the structure of the iris flower in its symmetrical arrangement of three whorls of three parts each, — an example, by the way, taken by the great Haeckel to illustrate actinial beauty, — with the reproductive organs clearly indicated.

Cross-pollination is effected by transferring the pollen from the stamen of one flower to the stigma of a flower on another plant. Tweezers may be used to extract the stamen, but if it is not important to preserve the flower, an effective little brush is made by breaking the entire flower and stripping it of standards, falls, and stigmas. Held by the ovary in the right hand, and the crests of the flower chosen as a seed-bearer pushed back with the fingers of the left, it is easy to transfer the pollen by brushing the stamens on the stigma lips. Experienced seedling-raisers think the best results are had from operations on fresh flowers and before mid-day in bright sunny weather.

¹ Page 6.

Keeping a record adds to the interest. In the small basket carried among the flowers on the mornings you essay the work of the bees, put a lead pencil, a pad $2\frac{1}{2}$ by 4 inches of good white writing paper, and a small cushion of ordinary brass pins. Write always first the name of the seed-bearer and second that of the pollen-bearer. Fold the paper through the centre, fold again not quite through the centre, and pin loosely, edges down and inside, around the stalk and below the ovary of the pollinated flower. This is a satisfactory temporary record that stands the weather until gathering time in August. This attempt at creation may be the beginning of a long journey into the fascinating field of genetics; at least, there will be something to look forward to.

For success, it is necessary that in the garden there shall be some good irises. *I. pallida dalmatica* both sets seeds and carries fertile pollen, as does Alcazar, while *florentina* will not set seed, and the pollen is rarely fertile. Her Majesty sets seed readily, but is a poor pollen-bearer.

The time of sowing the seeds may depend largely upon convenience. Mr. Morrison believes that the most uniform results come from sowing as soon as ripe. This is following Nature's way, and with *I. gracilipes* and *I. cristata* I have found it the only way to secure good germination; but I have sown the seeds of bearded sorts at my convenience, up to freezing weather, with satisfactory results. Any well-drained out-of-the-way place in the sun, well prepared and ringed around with stones, is the method I use. The seeds may be sown thickly in trenches, three quarters to an inch deep and only far enough apart to facilitate weeding. Each packet should be marked with a label carrying the paper record. Slender strips of oxidized zinc, $1\frac{1}{2}$ by 9 inches, written on with an ordinary lead pencil, make very good seedling-bed markers. These may be bought

in rolls, already cut the desired width. It is easy to snip them off, and the oxidation is effected by throwing a scattered pile down for a month in a place exposed to the weather. If the lower end is cut in a point, and half the length folded by pliers into an open trough, pushing into the ground will be easier.

Cold-frame sowing is practised by many, but is not necessary. The seeds do not need coddling, but because of the hard coat are benefited rather than otherwise by freezing and thawing. Transference of the seedlings to nursery rows a foot apart, with plants eight inches apart in a row, — as soon as large enough to handle, — is advocated by the best breeders. It should not be deferred later than August, and seedlings should be watered if the weather is dry.

Bloom is sometimes had a year from germination, but in my experience it is more often two years. And when they bloom they will not all be swans! One of the good results of year-after-year seedling raising is the growing discrimination it cultivates and the strength to discard.

It should be noted that the leading hybridists consider the chance of stray pollination in the Pogoniris too slight to necessitate the laborious bagging of the flowers, — except perhaps in some anxiously important cross, — though some remove the anthers from the seed-bearing flower. In consideration of the fact that the Pogons are not equipped for self-fertilization, this would seem an unnecessary precaution.

In the Apogon group existing provision for self-fertilization requires the removal of the anthers from the seed-bearing flower, *before* fully opened, and bagging until the stigma is ready to receive pollen from the other parent.

DISEASES, PESTS, AND REMEDIES

So far as concerns cultural troubles for the gardener from diseases and insects that attack the iris, this chapter might be headed "The One Insect and the One Disease." And in some fortunate gardens not even these are known! In many gardens, however, the iris root-rot and the iris borer work'serious damage. Control of both is simple.

Iris root-rot. — "What is the matter with my iris when the bloom stalks fall over and smell to high heaven?" is a frequent agonized inquiry. A bacterium which you may call *Bacillus carotovorus* or *Pseudomonas iridis*, as it pleases your sense of euphony, has attacked the base of the crown of leaves. Both the name and the smell are of alarming strength and may well throw the inexperienced gardener into a panic. If the attack appears among irises of which there is a good supply, the quickest, easiest, and cheapest remedy is to remove all affected plants to the burning heap. If it is a variety of which there are only a few rhizomes, then curative measures must be used. I rely on a solution of bichloride of mercury, that is, corrosive sublimate, 1-1000 (the druggist will supply tablets with instructions), as insurance against the loss by rot of a valuable plant, provided the trouble is discovered before the rhizome is gone.

This bacillus exists in many old gardens and in vegetable plots and often attacks carrots, turnips, and asparagus. My first experience with it was a sudden, simultaneous, and devastating appearance in three separate parts of my garden — an old cold-frame site, the end of an asparagus bed, and a small

vegetable plot, in all of which iris had been planted a year and two years before.

If the infection has spread to many roots, it will be necessary to lift and trim off into a paper-lined basket all diseased portions. The sound parts should be dipped into 1-1000 corrosive sublimate solution — a wide stone jar is the best receptacle — and, if possible, left to the sunlight for a day. Planting in a fresh location is recommended by good authorities. Where this can be done, it is no doubt a helpful precaution. Because of having nowhere else to plant, I have not tried that, and the fact that this form of rot is now practically nonexistent in my garden would indicate that it is not a *sine qua non*.

The laborious lifting is not necessary in the case of the early infection of a single small clump or root. A paper-lined basket or box to receive the scrapings, a sharp-edged, strong-handled, small kitchen spoon, a bottle of corrosive sublimate solution, and a kneeling pad make up the equipment with which any attacks about a garden may be comfortably met. Scrape away to sound tissue, — be thorough about this part, — putting all scrapings on the paper to be burned. Expose to the sun, a powerful ally, and treat the wounds by pouring the corrosive sublimate from the bottle, an easier way than applying it by the spoon.

Remember: this particular rot is infectious. Burn all refuse. Keep tools used in treatment disinfected. The corrosive sublimate is a deadly internal poison, but not hurtful to the hands. Mark all containers POISON. If there is a spontaneous outbreak at different parts of the garden, a daily inspection should be made, with treatment where necessary.

Stable manure, which carries the bacillus, should not be used in contact with the rhizomes.

Careful observers agree that environment has much to do

with the susceptibility of the rhizome to attacks from this bacterium. If the drainage is perfect, the sunlight abundant, and the soil light, the resistance is much better.

In borders inclined to be heavy and to be crowded and shadowed with other perennials and enriched with stable manure, root rot will often appear, but it is easily controlled by the measures given. I keep corrosive sublimate solution ready at hand, as mothers of small children keep castor oil! Despite the unprecedented rains and damp of this past summer, I have had to use it but twice, and then on only two roots in soil highly enriched for vegetables, in which iris was planted last season.

The disease is usually first noticed at the blooming time, when it has already made much headway. The experienced gardener will learn to note dark water-soaked areas at the base of the leaf blades, running up into the sheaf. A prompt treatment as soon as noticed will save the rhizome from the extreme of custard-like deterioration.

Yellow outside leaves. — Sometimes gardeners are disturbed by the outside leaf turning yellow in the early spring and summer. This occurs, in my experience, occasionally on roots that have been transplanted late in the autumn previous, and is, I think, caused by the insufficient root formation. It rights itself as the season progresses.

Rusty-looking spots on foliage. — These are found on plants in soil that has a deficiency of lime, and the condition is corrected by an application of hydrated lime to the beds, — enough to whiten the soil perceptibly, — which may be done as soon as the spots are noticed, preferably before a good shower.

Browning of tips of leaves. — Some varieties of iris, notably those with the blood of Amas or of Trojana, have an unsightly period after blooming, which is, no doubt, due to the

ancestral habit of resting completely in the hot dry regions from which these species have come. No harm comes from cutting away these browning tops as they are spent. In late summer and autumn rains they become slightly with fresh green foliage.

INSECT PESTS

Borers. — The iris borer (*Macronoctua onusta*) is the most serious of the insects known to attack irises. The moth apparently lays its eggs in the fall, near or on the basal leaves. The over-wintering eggs hatch in the spring, and the young larvæ eat their way downward inside of the leaves toward the rhizome, where they continue feeding in the older woody portions, sometimes eating out the growing point and destroying the plant. In the early stages their presence may be recognized by the bleeding of the plant, which shows between the folds of the leaves as a wet stain. Later in the season the leaves become stunted and darkened. In late summer, if the plants are dug, the actual borer can be found in the woody rhizome. By July or August the developing larvæ reach maturity and are then about an inch and a half long, whitish, with a pronounced pinkish tinge above the spiracles. Pupation takes place in the soil near the base of the plants, usually in August or September, depending on locality. The pupa is shiny chestnut-brown in color. The adult moth is short-lived and the female lays her eggs soon after emergence.

The above-outlined life-cycle is a summary of the statement appearing in Farmers' Bulletin No. 1406, "Garden Irises," by B. Y. Morrison, which statement carries the endorsement of the Bureau of Entomology of the U. S. Department of Agriculture.

Observations in my garden accord with this statement, with a note that the detection of the borer in the Apogons (the

Sibiricas, the Japanese, and so forth) is made by a *yellow leaf in the centre* of the sheaf. If this comes away when pulled, showing a clean cut at the bottom, the borer is there. No wet or slimy stain follows the trail here, because of the dry texture of the leaf as compared to the more succulent *Pogon* foliage.

Control of this borer may be secured in two ways.

Hand picking. — Where there are only a few irises, much relief may be had by hand picking, which is done by opening the leaf and hunting down the borer, by cutting off the sheaf below the wounds and, to make assurance doubly sure, pouring a spoonful of corrosive sublimate solution on the decapitated sheaf. This is laborious and, where there is much iris, impracticable on this account.

Burning over in early spring.—The accident of a burned-over border of irises to hasten spring cleaning, in which no borer appeared that summer, though known to have been there before, gave the clue which for me has solved the borer problem. I began to burn each spring as conditions got right for burning, in mid-March or a little later, according to season, in northern New Jersey. It was done hesitantly at first. The relief, though, made me bolder and squeamishness departed. I am now only concerned that the fire does not spread, and I never attempt the burning without a helper near by. On isolated plantings I spray — let the faint-hearted throw up their hands in horror — kerosene from a small compressed-air sprayer, to make the burning hot and swift. Observation showed that where the fire was hottest and quickest, there the plants were free from the pest; and, too, the kerosene assists dispatch. Waiting for the just-right day for burning delays the work.

When the planting is an established one, the dead blades of the iris, lifted slightly with fork or rake a few hours before burning, usually make a sufficiently hot fire to cleanse the

plants of eggs. On roots planted the previous summer, leaves or other trash must be applied.

Clumps of *I. k mpferi*, *I. sibirica*, and all heavy-foliaged irises, if in borders with other perennials, should have the dead foliage well shortened before burning, or the conflagration is too great for neighboring plants. For plants like *I. trojana* and *Caterina*, that keep foliage through the winter, I have found it best to cut this back and then apply the sharp burning. Clumps in long borders, used in association with other perennials, I burn over successfully by making a circle wet with the watering pot, and standing by with a pail of water and an old broom to dab out any encroaching flame.

The leaves persisting on the rhizomes at the time of burning will be, of course, cooked, and will look unhappy and pallid. At that season, with a good rain or two, new foliage soon puts out.

Stress must be laid upon the necessity of doing the burning with a Spartan heart, fearlessly, quickly, sharply, and cleanly, even though it may, at times, touch the bare rhizome — which does not mind a quick-racing fire, but certainly would resent a bonfire above it.

Emphasis should be laid upon getting the burning done as early as possible in the spring. The earlier the less likelihood of injury to starting growth.

Notes

I do not burn over in the winter because, even though physical conditions in this climate permitted it, I feel that the rhizome can better stand any shock attendant upon the burning with vegetative growth near activity.

I have found that the rhizomes of *I. gracilipes*, *I. tectorum*, *I. fulva*, and for some reason *Statell * (though no other bearded

iris does) resent burning. I have burned over all the pumilas, and without apparent injury, for they bloomed gayly; but my heart has not allowed me to do it often, with the thought that the blossom bud was so near to breaking out. On these excepted plants I watch for any injury and kill by hand.

I do *not* spray the kerosene on plants in borders with other plants.

Remember that in the quick hot fire all low labels, though they are of zinc, will be destroyed or partially so, as will wooden labels on wire stakes. A satisfactory label is described in Chapter V.

Observations

The early burning is an important aid in the spring-cleaning problem.

The iris is a favorite host for aphids, as anyone knows who has carried rhizomes from abroad over the winter in pots. Burning over the iris greatly lessens this pest in the garden.

I believe that my comparative freedom from root rot is due to the annual cleansing by fire.

I have given my experience at length as a practical working method, because letters that come to me indicate that the pest is widespread, with equal ignorance of how to deal with it. Farmers' Bulletin No. 1406, quoted at the head of this discussion, gives records in the Bureau of Entomology of the iris borer in New York, Pennsylvania, Ohio, Maine, Connecticut, Illinois, and Iowa, with garden records of its occurrence in Massachusetts, Maryland, and California, to which New Jersey can be added.

Other methods may be better for other gardens. For me the early spring burning is the best I have found.

"But do you get good bloom after burning?" ask the skeptical.

My reply is, "Come to my garden in late May or early June, and see!"

Verbena bud moth. — Many an anxiously watched seed pod has been feeding ground for the larvæ of this moth, *Olethreutes hebesana*. It can be detected by the excreta at the sides of the pod, and by webbed passages between the pods. Bagging seed pods as soon as formed will save valuable ones, and cutting and destroying others will hold the pest in check. Its injuries are not important except where seed is desired. Mr. E. B. Williamson has supplied the name of this pod-injuring moth, as has Mr. A. W. W. Sand in the bulletin referred to in the bibliography, page 113.

XVI

THROUGH THE CALENDAR WITH IRIS NEEDS

January.— If there is a January thaw, don your broadest shoes, with broad arctics over these, and walk slowly with covering steps directly over the mulched plantings of *I. gracilipes* and *I. cristata*. This applies also to newly made autumn plantings of the Siberian and the Japanese irises, and to the bearded that did not have time to establish themselves firmly before freezing weather.

If you have tried to grow *I. stylosa* in a deep cold-frame, there should be some buds to be picked, still tightly rolled and with a speck of lavender showing at the tip. Bring into heat some flats of iris clumps that have been left to freeze for forcing.

February.— Repeat January attention to tramping in case of thaws. There should be more *stylosa* buds to pick as the sun comes back. More frozen iris clumps may be brought in.

March.— The early part of the month (in northern New Jersey) will need a repetition of January and February. As the snow leaves the ground, watch for frost heaving, and tramp the roots back into place. This will be needed on all plantings where the drainage is not perfect.

By the middle of the month or slightly later, conditions will be ready for burning over. (See Chapter XV.) Burning, of course, is not necessary if there has been no borer. It is a great help in spring cleaning, however. After burning, rake with a bamboo rake. This is a delightful tool and less likely to pull any loosened rhizome out of the ground than the heavier rakes.

Apply a broadcast dressing of bone meal and hydrated lime,

equal parts by weight, or by measure four of bone meal to six of lime. I use a rather heavy application, at the rate of four quarts to one hundred and fifty square feet. Rains carry this down, and the rhizomes are not harmed if it falls directly on them. Do not scatter in lumps, but finely divided and widely spread.

Burning over should be completed by end of the month or earlier, unless the spring is very cold and late.

There will be many buds of *I. stylosa* in the deep cold-frame.

There should be buds of *I. reticulata* and of *I. persica* out of doors to bring into the house. Of *I. persica* Loudon says (*Encyclopædia of Gardening*, 1850), "Greatly esteemed for their beauty and sweet smell, which is so powerful that one plant will scent a whole room."

April. — In a cold wet spring the March work of cleaning, fertilizing, and early cultivation may have to go over into April, but should be done at the earliest possible moment. Remove all perennial weeds early. They pull out easily before the ground is settled.

Cultivate lightly about new and year-old plantings. Free established ones of all débris.

Some irises, like Statellæ, Carthusian, and others that carry winter foliage, will need a careful going over to remove leaves unsightly from winter frosts. Keep a close watch for winter injury and rot. Scrape away diseased parts, treat with the bichloride of mercury solution, and leave wound exposed to the sun.

It is a good time to make new borders of *I. cristata*. Bring in small mats of the early low-growing irises, fitted into broad fern-pans, for the sunny window. They will be greatly appreciated if a week of storm and sleet stops the outdoor progress.

Late April will bring many of the early irises into bloom. If

they are seedlings, watch for fine color and form. Throw poor ones on the burning pile.

May. — Remove bloom stalks from the early bloomers, except where wanted for seed. A sharp vegetable knife makes the work quick. Do not cut too close — leave some of the stem among the leaves to dry naturally down to the rhizome. Keep an alert eye for appearance of rot, and also for the cross cut of the borer larvæ on the leaf sheaves. (See Chapter XV.)

If you have no iris blooming in late April and early May, visit a good collection and select some.

Late May will bring much bloom, and if seedlings are to be attempted it is a busy time with crossing. (See Chapter XIV.) If faded flowers are removed daily, the joy from the iris will be more complete. This may be done without injury to the seed pod if the withered flower is pinched above the ovary.

Make notes of changes to be made as the bloom opens. With the last blossoms clinging, they may be switched around with no hurt to the rhizomes and in accord with the color combinations wanted. Do not, however, plant in too large clumps, but break them up. (See Fig. 6, Chapter V.)

June. — The great climax of the bearded iris bloom now gives good opportunity for study and comparison. Be firm in discarding drab colors. Fork them right out while in bloom. If left until bloom is past, they will probably be there to plague you next blooming season, and you will wonder why your iris never looks well. Strength of mind to discard the inferior is true garden progress.

Still keep an alert eye for the iris borer and for rot. Watch for *yellow central leaves* on sibiricas, spurias, and the Japanese. If they come easily with a pull and show a bitten end, a borer is in the sheaf. For treatment, see Chapter XV.

Do not cut away iris foliage to make way for other perennials,

but rather push other perennials away from the iris. The rhizomes need all the sun they can get.

Bag seed pods to protect from the verbena bud moth, which stings the pods to lay its eggs, the larvæ of which are very destructive to the seeds. Ask your smoking friends for their tobacco bags. They make fine protection.

If small round oily spots appear on the leaf in early summer and there is no trail from them to the centre of the leaf, they are probably the work of the aphid that winter in large numbers at the base of the iris leaves, from which they soon depart.

Note that, in June, just after the bearded iris is finished, there are interesting species beginning to bloom that have distinct garden value. If you have none, try to see some, or consult a good list and make orders while you feel the need.

Keep down weeds. Cut off bloom stalks down no farther than the stalk may be hidden in the foliage. There is sometimes a tendency to rot if the stem is cut so early, close to the rhizome. Leave some for ripening off.

If twitch grass has obtained a hold among the rhizomes, nothing short of lifting the whole clump will answer. Pick out and trace down every runner. Remake the spot. Divide the rhizomes and plant back. Use the bone meal and lime mixture at the rate (to each plant) of the amount a woman may hold in her cupped right hand.

It is important in all remakings of iris plantings — unless they are already on sloping ground — to add new material, sand or coal ashes if the bed is heavy, humus or good loam if sandy. If this detail is not attended to, the beds will get too low for the drainage the bearded iris loves. If plants look stunted in new plantings, it is probably due to lack of anchoring roots, on account of late planting the year before, and will right itself.

July. — Make notes on Japanese varieties. Try to see a good collection. Fork out and put on compost heap the poor sorts. Plan changes, but *do not divide until mid- or late August*. If seed pods have been left on the sibiricas, take them off before they begin to ripen, to avoid the weed-like nuisance of seedlings. There is a joint down in the foliage which will snap quickly on a cool day.

I. cristata may be divided with good results this month. Do not put it off too late. This is the best time to divide *I. gracilipes* and *I. minuta*. If the weather is not showery, watering after transplantation and until established will be necessary for these. Some varieties get shabby in foliage at this time. It will do no harm to cut away rusty-looking foliage, but do not shave the plant. Burn these trimmings.

Keep free from weeds. Stir the soil lightly about new and year-old plantings. Clear all dying leaves away from crowns, particularly of established plantings, to give free access to the sun. *Iris cannot stand a summer mulch!*

If small rusty spots appear on leaves of the bearded sorts, it is an indication of a need for more lime. Apply again the lime and bone mixture recommended for the spring, — enough to perceptibly whiten the soil, — at any time, preferably before a shower. In a lime-impooverished soil it takes much to satisfy a bearded iris.

I. dichotoma will begin to bloom late in the month. Its tall slender stalk will need light support. Provide goldenrod stalks, cut in the autumn for this purpose. Late in the month division and planting of the bearded iris may be done again.

Cut bloom stalks of Japanese and *spurias* not wanted for seed.

August. — This is the best month to have roots of the bearded iris sent from distances for planting, also a good one for division in the garden.

Watch for ripening seed pods and pick just as they are parting at the top. Dry in a sunny open place. Do not allow a number to crowd together in a box or basket; keep them spread until dry. Keep all shriveling foliage pulled away from the rhizomes of the bearded sorts, to let every ray of sunshine on them.

If, in lifting iris, bright chestnut-brown pupæ are found, step on them. They are probably borers, soon to become moths to make more borers.

This is a good time to transplant seedling iris if it has not already been done.

Enjoy *I. dichotoma* at the tea hour.

September. — Early this month is the best time for lifting, dividing, and transplanting the Siberian, Japanese, and Spuria irises. (See Chapter VIII.) There is also still time for remaking plantings of the bearded sorts; but do not delay. This is a good time for putting in place *I. dichotoma* seedlings from either spring- or fall-sown seed. Plant near the place for afternoon tea, and where the flowers may open in shadow, but where they may have sun until mid-afternoon.

Where accent plantings of the Siberian or the Japanese iris have grown too great in girth, take off pieces from the side and fill the holes with rich compost. They may be kept in one place indefinitely in this way.

If there has been much rain, rot may appear in the rhizomes of the pogoniris. Scrape away, open to the sunshine, and give a liberal douse from the bichloride of mercury bottle.

October. — All dividing and planting, by preference, should have been finished, but may still be done early in this month. Do not, however, at this time plant roots outside that have come from a distance and are dry. Put them in pots in a cold frame, or in a sunny window in the cellar. They do not need to

be kept warm, but they do need to be kept from alternate freezing and thawing.

Some gardeners make a practice of cleaning and cutting away foliage in late October. No harm can come from taking away ripening foliage, but it is a lot of work, and burning in March is a quicker and easier way of cleaning, besides being a great help against the borer.

Sometimes, after a hot baking autumn, *I. stylosa* will be giving some bloom.

Iris seeds may be sown now. (See Chapter XIV.)

November.—Toward the end of the month, mulch all late summer and autumn plantings with leaves held down by brush. Straw may be used, but *not manure*, save possibly for the Japanese. Coal ashes, heaped a few inches above the plant, make a very good mulch which can be raked away and worked into the soil in the spring. Mulch *I. cristata* and *I. gracilipes*, however long established the planting. This is imperative.

Prepare clumps in flats for forcing, and leave where they may freeze but may be gotten at easily. An open shed is a good place. (See Chapter XIII.)

December. — Finish all necessary mulching.

There may be, in the cold frame, an *I. stylosa* bud to be pulled.

Commend your iris to the care of the Red Gods!

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